ZebraNet® 10/100 Print Server

User and Reference Guide

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Preface

The Preface discusses the topics and illustrates standards that are used throughout this guide.

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Be sure to complete the feedback form located at the beginning of this guide. For details see, *Your Feedback Is Important on page i*.

About this Document

The *ZebraNet® 10/100 Print Server*[User and Reference Guide](#) consists of these chapters:

Title	Content Description
Introduction	This chapter provides a high-level overview of the ZebraNet 10/100 Print Server (10/100 PS), installation instructions, standard network configurations, and how to work with 10/100 PS.
Installation	This chapter provides information on how to install 10/100 PS (external and internal) and the ZebraNet Utilities.
Getting Started	This chapter provides you with information on how to work with the most frequently used 10/100 PS features.
Printing Configurations	This chapter provides information and instructions on configuring your printer for remote BSD-style LPD printing on the UNIX operating system.
Using Printing Protocols	This chapter provides information and steps to set up your 10/100 PS to support Internet Printing Protocol (IPP).
ZebraLink *For ZebraLink-enabled printers.*	This appendix provides you with detailed information that allows you to use the enhanced functionality of your ZebraLink-enabled printer with the 10/100 PS.
10/100 Print Server	This appendix provides you with details on the most commonly used 10/100 PS features.
ZebraNet Utilities	This appendix provides you with details on ZebraNet Utilities, the software suite of printer administration tools that complements and enhances both ZebraLink and the ZebraNet family of connectivity products.
Hardware Troubleshooting	This section provides you with solutions to known issues.

Frequently Asked Questions	This section is a compiled group of frequently asked questions (FAQs) about 10/100 PS.
Glossary	This section is a glossary of terms that are specific to the 10/100 PS.
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Document Conventions

The following conventions are used throughout this document to convey certain information:

About this Chapter Sections These sections list and describe each main section of the chapter, including the initial page numbers of those sections. These sections primarily serve as hyperlink components for the Adobe Acrobat `.pdf` version of this guide.

Alternate Color (online only) Cross-references contain hot links to other sections in this guide. If you are viewing this guide online in `.pdf` format, you can click the cross-reference (royal blue text) to jump directly to its location.

Command Line Examples All command line examples appear in `Courier` font. For example, you would type the following to get to the Post-Install scripts in the `bin` directory:

```
Ztoolsdfdf
```

Files and Directories All file names and directories appear in `Courier` font. For example, the `Zebra<version number>.tar` file and the `/root` directory.

Safety These safety icons are defined in the following examples:

Caution • This installation must be performed by a qualified service technician.

Electric Shock Caution • Turn Off **(O)** the printer and disconnect it from the power source before preformating these procedures.

Electrostatic Discharge Caution • Observe proper electrostatic safety precautions when handling any static-sensitive components such as circuit boards and printheads.

Caution, Caution, Important, Note, Tools, and Example These topics are defined in the following examples:

Caution • Advises you that failure to take or avoid a specified action could result in loss of data.

Caution • Advises you that failure to take or avoid a specified action could result in personal injury.

Important • Provides information that is essential to the completion of a task.

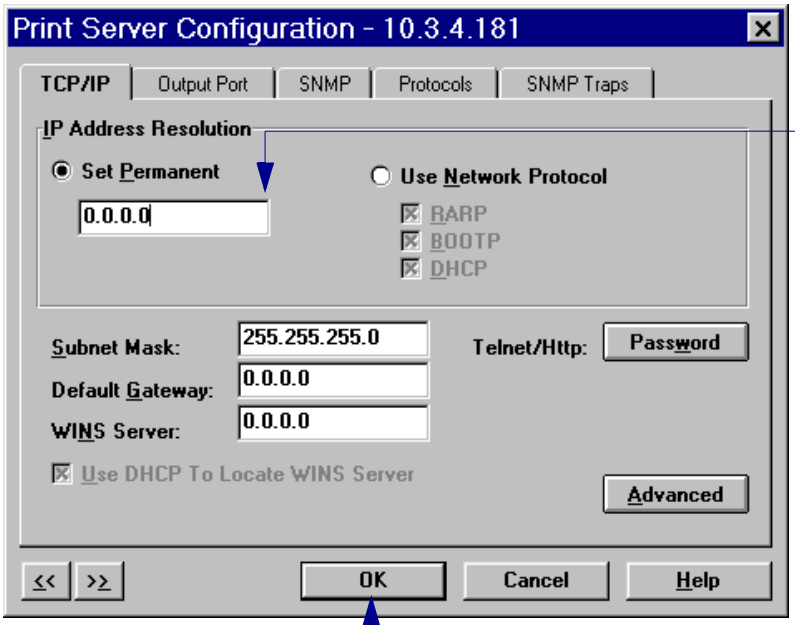
Note • Indicates neutral or positive information that emphasizes or supplements important points of the main text.

Tools • Identifies the tools you need to accomplish a task.

Example • Provides an example, often a scenario, to better clarify a section of text.

Illustration Callout Instruction Illustration callout instructions are used when an illustration contains either information about a dialog box or step(s) to accomplish in a dialog box.

This illustration callout instruction identifies a section of the dialog box, and the other callout shows steps to follow:



In the Set Permanent text-box, type in the print server's IP address.

When you are finished, click OK.

Related Documents

In addition to the *ZebraNet® 10/100 Print Server User and Reference Guide*, the following documents might be helpful references while using 10⁄100 PS:

Note • Most of these documents are available on our Web site.

- *Wireless Card Socket Option (WCSO) Install and Users Guide*
- *The ZebraLink Solution Application White-paper*
- *ZBI™ Guide*
- *ZPL II® Programming Guide Volume One: Command Reference*
- *ZPL II Programming Guide Volume Two: The X.10 Environment*
- *EPL2 Programmer's Manual*
- *Line Mode Programmer's Manual*

CHAPTER 1

Introduction

This chapter provides a high-level overview of the 10/100 PS device, installation instructions, standard network configurations, and how to work with 10/100 PS.

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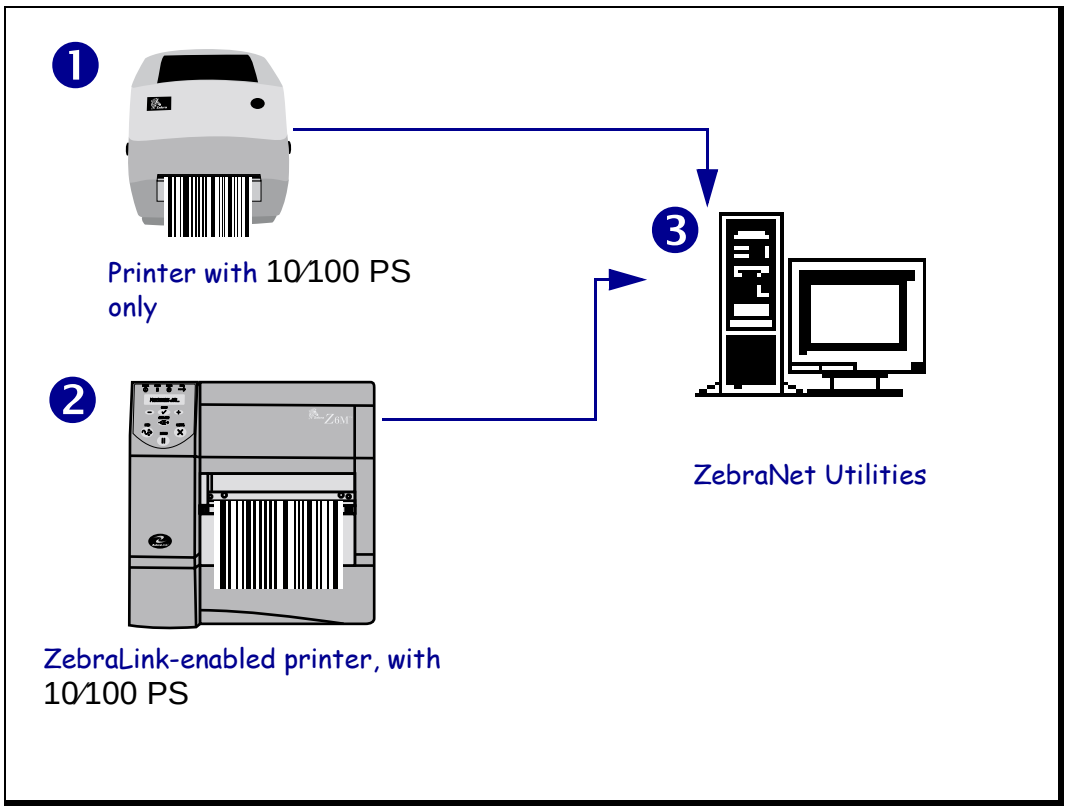
Overview

The 10/100 PS is an optional factory- or field-installed device that connects the network and your ZebraLink-enabled printer. 10/100 PS provides you with a browser user-interface for printer and 10/100 PS settings. If your printer also has ZebraNet Utilities, you have even more functionality. For details, see *ZebraNet Utilities on page 4*.

Important • You can download the most recent version of ZebraNet Utilities from our Web site: www.zebra.com.

Illustration

This illustration shows the flow of all the components that work with 10/100 PS. The table that follows identifies the components and how they enhance each respective device:



Components	Description
Printer with 10/100 PS only ❶	10/100 PS gives your printer these features: • WebView • Alert • Print Server and Printer setup using a browser • allows the remote monitoring and configuration capability of the 10/100 PS using a browser. • allows you to send unsolicited printer status messages via email-enabled devices.
ZebraLink-enabled printer with 10/100 PS ❷	A ZebraLink-enabled printer with 10/100 PS gives you the above-mentioned features, plus these features: • *ZBI* (Zebra BASIC Interpreter) — programming language that works with ZPL II to control and interpret incoming text and data. This provides you with the ability to create stand-alone applications using a printer and peripheral devices, such as a scale or a scanner, without needing a PC host. Internet-aware ZBI then transmits data captured by these devices over your LAN, WAN, or wireless network (adding the Wireless Card Socket Option allows these features to work over a wireless network) via email or TCP/ IP messaging. **NOTE** • 10/100 PS can be either field- or factory-installed for additional features. For details, see *Installation Types on page 10*.
ZebraNet Utilities ❸	ZebraNet Utilities is a suite of software programs that work with 10/100 PS and enhance the features of ZebraLink resident within ZPL-based printers. The features include • *ZebraNet Alert* lets you configure multiple event alerts per device with different alerts going to different people. You are notified of alerts from either visual or audio cues. You can also generate advanced alert reports.

Components	Description
	• *ZebraNet Connect IP* lets you, through a Windows® interface, enable simple printer selection of an IP addressable printer. • *ZebraNet View* allows you to locate printers automatically. ZebraNet View searches on parameters such as IP address, subnet, printer model, printer status, and many other user-defined characteristics. It also offers powerful device management capabilities. • *ZebraNet View Java Applet* is a Java-based version of the popular ZebraNet View. It gives you ZebraNet View capabilities in a non-Windows environment.

Requirements

This section lists the minimum requirements for 10/100 PS, which include software, browser support, and hardware.

Software

These are the platforms supported by ZebraNet Utilities:

Microsoft® Windows® 95/98/Me/NT/2000/XP:

- Client mode for peer to peer printing via TCP/IP, IPX/SPX™
- Print Protocols & Methods (all simultaneously active):
  - TCP/IP
  - LPR/LPD
  - Telnet
  - FTP
  - IPP v1.0
  - Raw printer port (port 9100)

The ZebraNet View Java Applet is supported by most Java-enabled browsers:

UNIX®, Linux, and other systems supporting TCP/IP:

- Print Protocols & Methods (all simultaneously active):
  - TCP/IP
  - LPR/LPD
  - Telnet
  - FTP
  - IPP v1.0
  - Raw printer port (port 9100)

Browser Support

- HTML v3.2 or higher
- Internet Explorer or Netscape Navigator

Protocols

- TCP/IP: ARP, RARP
- TCP/IP & UDP: DHCP, BOOTP, SNMP v1.0
- HTTP v1.0

Hardware

These are the minimum hardware requirements:

Printers	External	Internal Field Upgrade	Internal Factory
*Xi*III*Plus*™	•	•	•
Z4Mplus™	•		
Z6Mplus™	•		
105*SL*	•	•	•

Compatibility

This section identifies the various components that are compatible with 10⁄100 PS.

ZebraNet Wireless Card Socket Option (WCSO) 10⁄100 PS is fully compatible with WCSO.

Software IBM®: Tivoli® v7.1.3, HP®: Web JetAdmin™ v7.0, OpenView™ v6.4, and any SNMP management application via Zebra Management Information Base (MIB) all work with 10⁄100 PS.

Installation Types

10/100 PS can be factory- or field-installed, as follows:

Factory Factory-installations are for new Zebra printers that are built with the internal 10/100 PS option.

Field Field-installations are for Zebra printers already in the field that do not have the 10/100 PS device installed. The 10/100 PS option can be installed on existing printers, as follows:

- External 10/100 PS — attaches to the printer parallel port

Important • This installation must be performed by a qualified service technician.

- Internal 10/100 PS — for the appropriate Zebra printers, this option connects directly to the main logic board

10/100 PS Specifications

Network Connection Ethernet 10BaseT and 100BaseT UTP RJ-45 connection Half and Full Duplex Communications

Printer Connection Bi-directional, IEEE-1284 Centronics parallel port (Compatibility, Nibble, and ECP)

User Interface LED activity indicators: bi-color display of operational status; bi-color display of speed and network activity

Size (external ZebraNet 10/100 PS) **Width**: 2.8 in. / 71.12 mm **Length:** 3.2 in. / 81.28 mm **Height:** 1.2 in. / 30.48 mm

Weight (external ZebraNet 10/100 PS) 2.7 oz/77 g

Power Maximum 450mA at 5.25VDC Power provided by the printer (Centronics pin 18, 5VDC at 450mA)

Environment Operating Temperature: 32°F / 0°C to 104°F / 40°C; Storage Temperature: -40°F / -40°C to 140°F / 60°C; Operating Humidity: 25 to 85% non-condensing; Storage Humidity: 5 to 85% non-condensing

Agency Approvals CISPR 22 Class B: IEC 950; Canadian Doc.: FCC Class B; EN55024; AS/NZS3548

Warranty Three years

CHAPTER 2

Getting Started

This chapter provides you with information and procedures for working with the most frequently used 10⁄100 PS features.

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Before you begin

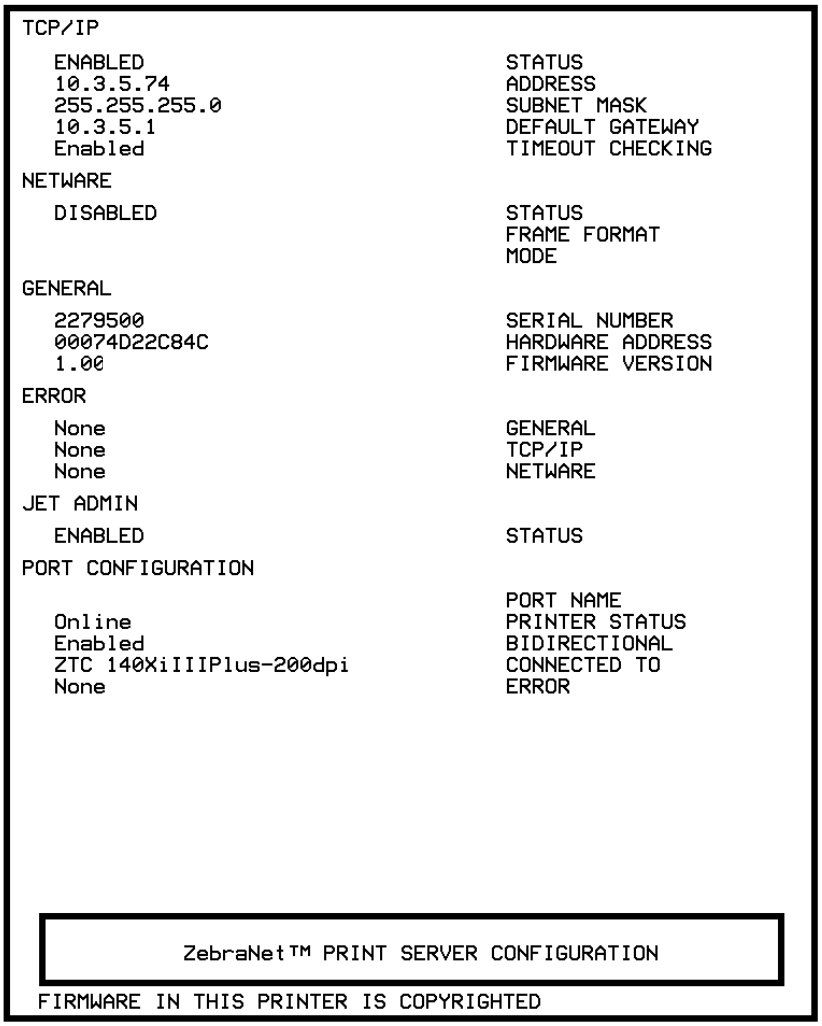
10/100 PS offers many features, but how you access and work with them is dependent on your environment. Before you begin, you need to get information from the 10/100 PS configuration label.

Important • Make sure the printer is turned off **(O)**.

To print a 10/100 PS configuration label, complete these steps:

1. Turn on **(I)** the printer and let it complete its power-up cycle.
2. Let the 10/100 PS complete its POST cycle.
3. When the above steps are complete, press the Test button and hold it in for a few seconds before you release it.

A 10/100 PS configuration label prints. Your configuration label looks similar to this:



4 From the configuration label, you need to get these numbers:

- ADDRESS (IP address)
- SUBNET MASK
- DEFAULT GATEWAY
- SERIAL NUMBER
- HARDWARE ADDRESS (MAC address)

5 On the configuration label that prints out for your 10/100 PS device, circle the above-mentioned settings. You can now proceed to *Assigning an IP Address on page 16*.

Assigning an IP Address

Before you can begin working with 10⁄100 PS, you must get or assign an IP address for the 10⁄100 PS device.

Important • Throughout the step sequence in this chapter, there are some features that require the default User ID and/or default password. If you are prompted, these are the defaults:

- **User ID**: `admin`
- **Password**: `1234`

With Dynamic Host Configuration Protocol (DHCP)

If your network uses DHCP, your 10⁄100 PS device is assigned a temporary IP address. This is important to know, because you have the option to make the temporary IP address the permanent IP address.

Note • Check with your Network Administrator to see whether your network uses DHCP.

Without DHCP

If your network does not use a dynamic IP addressing system (such as DHCP), you need to set a permanent IP address of the 10⁄100 PS device.

ZebraNet View

ZebraNet View is the Windows-based print server management and configuration utility that came with your 10⁄100 PS.

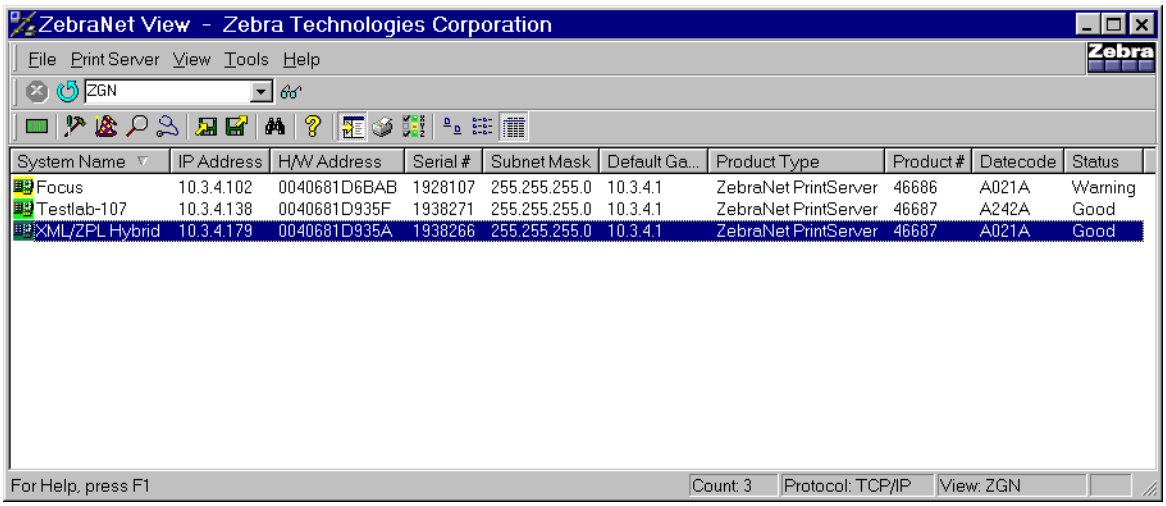
Important • The remaining sections are dependent on the successful installation of ZebraNet Utilities, which you should have completed on page 56.

To assign an IP address using ZebraNet View, complete these steps:

1 From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet View.

Important • On the illustration that follows, take note of the `H/W address` column and `Serial #` column. Compare what you see in ZebraNet View with the configuration label you printed out.

The *ZebraNet View* dialog opens:


ZebraNet View - Zebra Technologies Corporation
File Print Server View Tools Help
Zebra
ZGN
System Name | IP Address | H/W Address | Serial # | Subnet Mask | Default Ga... | Product Type | Product # | Datecode | Status
Focus | 10.3.4.102 | 0040681D6BAB | 1928107 | 255.255.255.0 | 10.3.4.1 | ZebraNet PrintServer | 46686 | A021A | Warning
Testlab-107 | 10.3.4.138 | 0040681D935F | 1938271 | 255.255.255.0 | 10.3.4.1 | ZebraNet PrintServer | 46687 | A242A | Good
XML/ZPL Hybrid | 10.3.4.179 | 0040681D935A | 1938266 | 255.255.255.0 | 10.3.4.1 | ZebraNet PrintServer | 46687 | A021A | Good
For Help, press F1
Count: 3
Protocol: TCP/IP
View: ZGN

2 Compare the `H/W Address` or `Serial Number` on the 10⁄100 PS configuration label with the `H/W Address` column on the screen to find the 10⁄100 PS you are working with.

3 When you locate your 10⁄100 PS, select it.

4 From the menu bar, select PrintServer>Configuration.

Important • If the 10⁄100 PS does not have an IP address, it shows in the main screen with an IP of **0.0.0.0**. If, after 2 minutes, you do not assign an IP Address, the 10⁄100 PS defaults to IP Address **192.168.254.254**.

5 If your 10/100 PS does not have an IP address, complete these steps:
   - Find your 10/100 PS and right-click it.
   - In the small dialog that opens, enter an IP Address, click OK.
   - The *ZebraNet View* dialog opens.

To set the subnet, complete these steps:

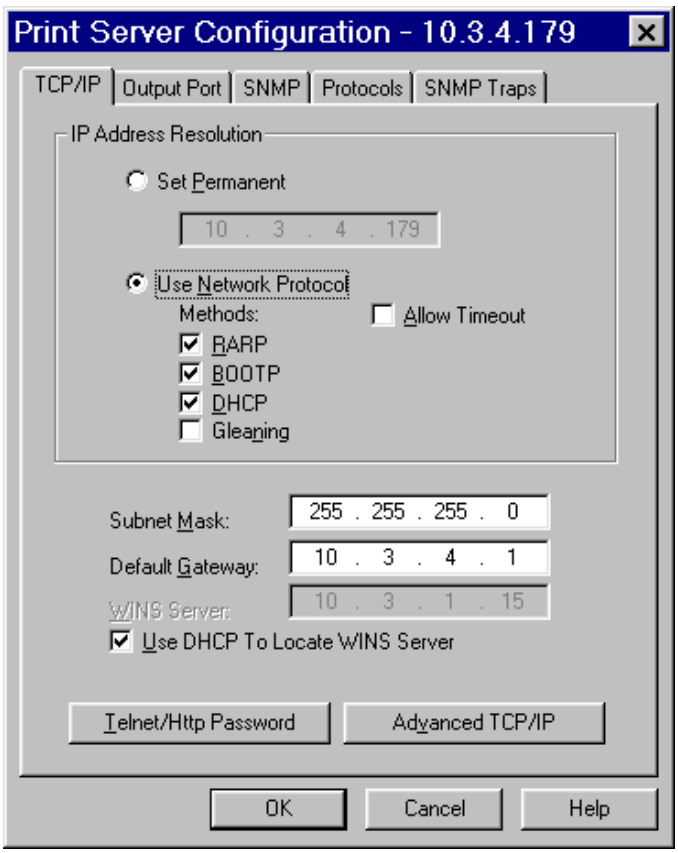
6 From the ZebraNet View menu bar, select PrintServer>Configuration.

7 Click the *TCP/IP* tab.

8 From the *Print Server Configuration>TCP/IP* tab, in the *Subnet Mask* text-box, type in your `subnet mask`.

9 Confirm it is accurate, and click OK.

The *Print Server Configuration* dialog opens:



10 To set a permanent IP address, enable the **Set Permanent** radio button.

11 In the **Set Permanent** text-box, type a new IP address and click OK.

To set the default gateway, complete these steps:

These steps are Optional.

1. From the ZebraNet View menu bar, select PrintServer>Configuration.
2. Click the *TCP/IP* tab.
3. From the *Print Server Configuration>TCP/IP* tab, in the *Default GateWay* text-box, type in your default gateway.
4. Confirm it is accurate, and click OK.

In a non-Windows environment

These steps can be used with all printers. However, the liquid crystal display (LCD) instructions are for printers with an LCD.

To assign an IP address from the printer LCD, complete these steps:

Important • Your 10⁄100 PS must have firmware 1.00 and higher and your Zebra printer must have firmware x.10 or higher with an LCD.

1. Turn on **(I)** the printer and allow 2 minutes for all systems to complete the self test. If you do not have a network cable in the port, the 10⁄100 PS prints the configuration label when it is ready.
2. On the printer front panel, press SETUP/EXIT.
3. On the printer front panel, press PREVIOUS twice until you reach the network settings menu item.
4. You can edit any of the following network settings in order to communicate with any 10⁄100 PS in your network environment.

Important • To change any of these settings, you need to use the default password: 1234.

- `ip resolution` (dynamic, permanent) The printer menu item IP RESOLUTION must be set to PERMANENT if attempting to assign the IP address from the front panel.
- `default gateway` (default setting of 000.000.000.000)

- `subnet mask` (default setting 255.0.0.0)
- `ip address` (if initial default setting is 0.0.0.0, after 2 minutes this defaults to **198.102.102.254**
- `ip protocol` (gleaning only, rarp bootp, dhcp, dhcp and bootp, all)

Assigning an IP address via a Telnet session

If your environment is not Windows-based, this section is for you. However, this method can be used in a Windows environment, too.

The methods used for assigning an IP address with a Telnet session are **Static Route** and **Gleaning**.

Important • This applies to any TCP/IP capable workstation/ host networked with the Zebra printer. Both the workstation/host and the 10/100 PS must be on the same network segment.

Before you can Telnet to the 10/100 PS and configure it, you must first assign the 10/100 PS a temporary IP address.

Static Route: To use this method, complete these steps:

1. Turn on **(I)** the printer and wait for 2 minutes to allow for the device self test.

   During this time, the 10/100 PS performs an address broadcast. If no address is assigned to the unit (via DHCP or Bootp), it uses a default address. The default address for 10/100 PS is **`192.168.254.254`**. Print the 10/100 PS configuration label to confirm the address; for details see page 14.

2. You can use the `route add` command to place the default IP address into the workstation's network routing table.

Example • In the next step, **** is the IP address on the 10/100 PS configuration label.

3. At the workstation/host command prompt (in Windows, go the DOS prompt), type:

   ```
   route add **** "IP address of the workstation" 0
   ```

Note • The zero (0) placed at the end of the "route add" command is optional on some systems.

4 Telnet to the 10/100 PS by typing:

`"Telnet xxx.xxx.xxx.xxx"`

The password is `1234`.

5 When finished, you can alter the appropriate settings. When complete, do a reset and allow the 10/100 PS self test to complete before proceeding with any communications activity.

Gleaning: To use this method, complete these steps:

Note • Gleaning works **only** on local subnets at routers. It does not pass Address Resolution Protocol (ARP) broadcasts.

A method by which the 10/100 PS uses the IP address of the first ping packet that is sent to its Hardware address.

1 Add an entry to the ARP table that assigns an IP address to an Ethernet (Hardware) address.

The syntax for this command is: `arp -s "temporary ipaddress of print server" "MAC Address (print server hardware address)" arp -s <temporary ip address> <MAC Address>`

Example • You would type: `arp -s 10.3.50.59 00-40-68-1D-B9-86`

2 Power cycle the printer.

3 As the printer reboots, begin a continuous ping to the address assigned previously.

Note • Most UNIX systems use a continuous ping.

To use a continuous ping from a Windows host, you must issue the command: `ping -t "ipaddress"`.

4. When the 10/100 PS begins to respond, stop the ping activity.

   In Windows, Ctrl + C halts the pinging.

5. Telnet to the 10/100 PS and assign the appropriate IP address, subnet mask, and gateway if applicable.
6. Once this is complete, reset the 10/100 PS.

   For details on resetting the 10/100 PS, see *Reset on page 104*.

Setting Alerts

It is important to understand the relationship between the 10/100 PS and the printer when you are establishing alerts. Here are the relationships you need to be aware of:

- Non-ZebraLink-enabled printers — can send alerts on only a specific set of printer errors that are reported in the IEEE 1284 protocol.
- ZebraLink-enabled printers — ZebraLink allows for the printer to send alerts *not* in the IEEE 1284 protocol.

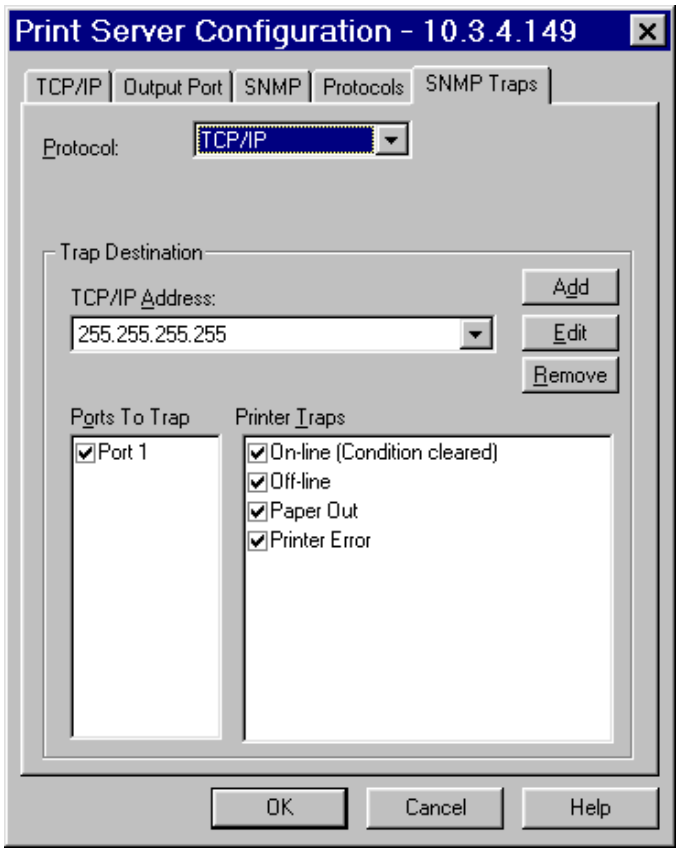
ZebraNet View

In this section are step-by-steps instructions on how to set up an alert using ZebraNet View. For information on setting up alerts using ZebraLink, see *ZebraLink on page 25*.

To set alerts (traps) using ZebraNet View, complete these steps:

1. In the ZebraNet View dialog, from the menu bar select Print Server>Configuration.
2. Click the *SNMP Traps* tab.

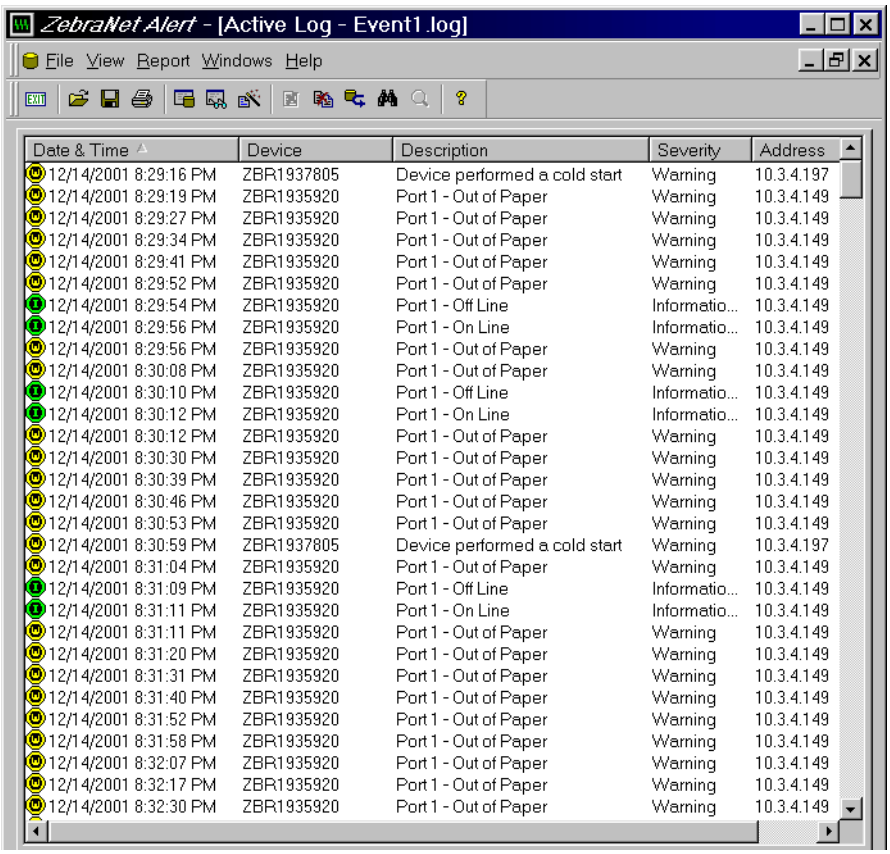
The Printer Traps check boxes are the alerts you can set from ZebraNet View.



3 Enable the alerts (printer traps) you want to set here and click OK.

4 To monitor the alerts you established, from the task bar select Start>ZebraNet Utilities>ZebraNet Alert.

The *ZebraNet Alert* dialog opens:



In this dialog you can view the log of errors and monitor the activity of your printer(s).

ZebraLink

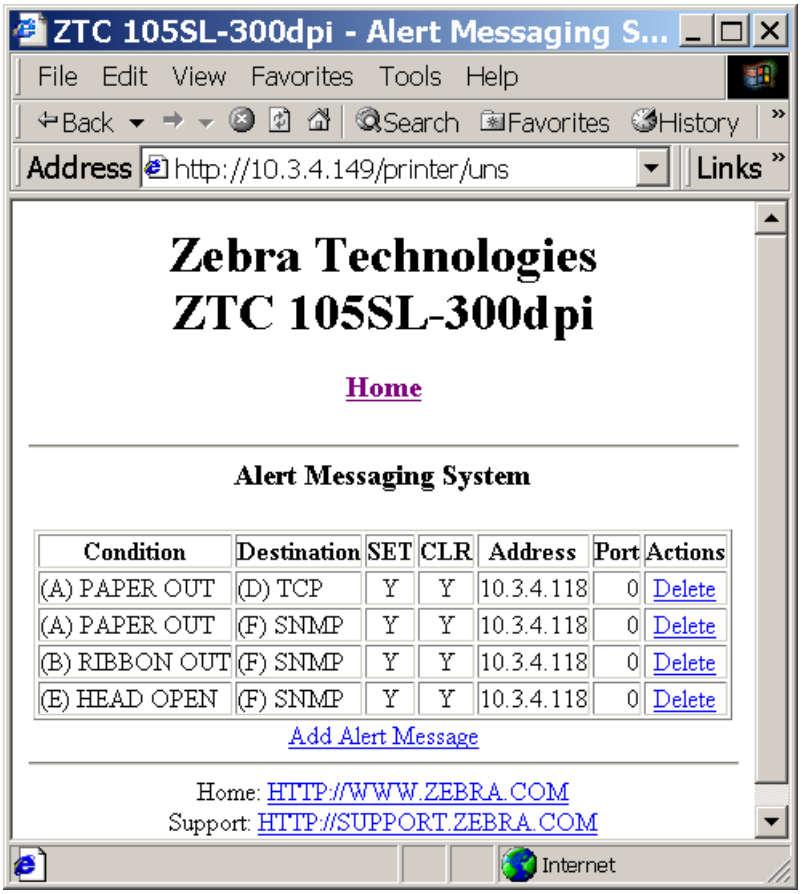
In this section are step-by-step instructions on how to set up an alert using ZebraLink. For information on setting up alerts using ZebraNet View, see *ZebraNet View on page 31*.

Important • If you do not have a ZebraLink-enabled printer, these steps will not work.

To view Alert Setup using ZebraLink, complete these steps:

1. Open a Web browser.
2. In the *Address* text-box, type your printer's IP address, and press Enter.
3. From the *Printer Home Page*, click Alert Setup.

   The *Alert Messaging System* dialog opens:


ZTC 105SL-300dpi - Alert Messaging S...
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://10.3.4.149/printer/uns
Links
Zebra Technologies
ZTC 105SL-300dpi
Home
Alert Messaging System
Condition Destination SET CLR Address Port Actions
(A) PAPER OUT (D) TCP Y Y 10.3.4.118 0 Delete
(A) PAPER OUT (F) SNMP Y Y 10.3.4.118 0 Delete
(B) RIBBON OUT (F) SNMP Y Y 10.3.4.118 0 Delete
(E) HEAD OPEN (F) SNMP Y Y 10.3.4.118 0 Delete
Add Alert Message
Home: HTTP://WWW.ZEBRA.COM
Support: HTTP://SUPPORT.ZEBRA.COM
Internet

   To add an alert, you need the default user ID and password.

4. To add an alert, click Add Alert Message.
5. Select accordingly.
6. You can use ZebraNet Alert to monitor alerts set through a ZebraLink-enabled printer.

From this Web page you can add alert messages to notify you when a printer is out of paper, needs a ribbon, and so on.

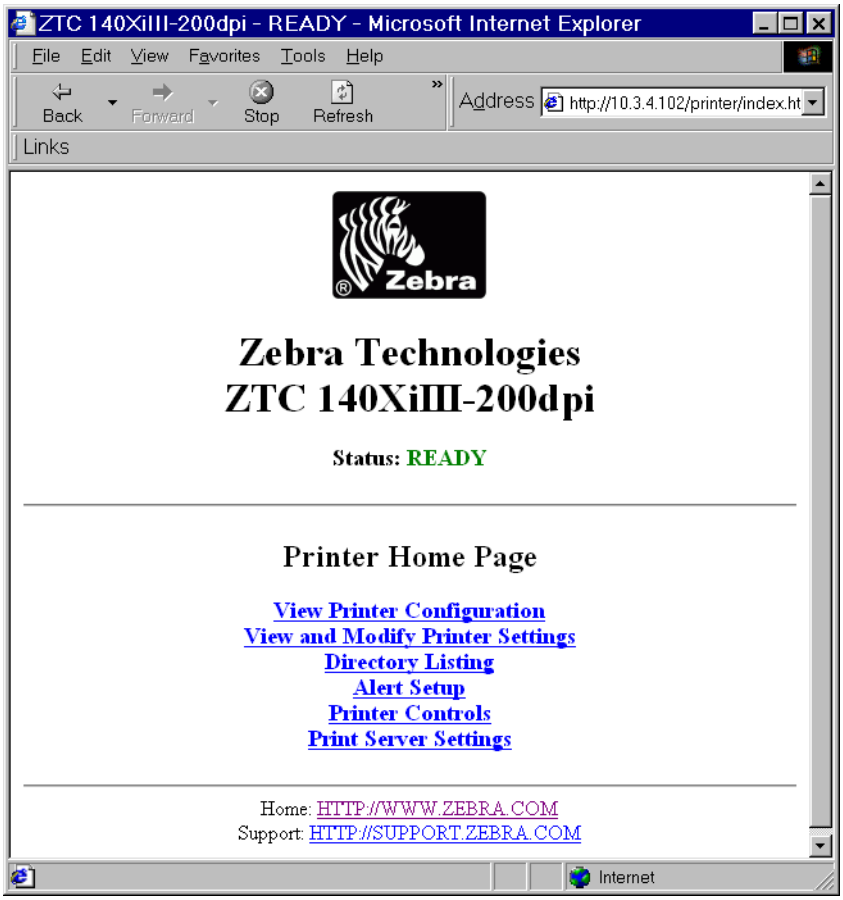
Establishing Email Alert Messaging

ZebraNet Alert supports email notification of printer errors sent directly to any valid email address. You can have multiple email addresses set up for routing different error messages, or split notifications between email and other network management tools.

To begin receiving email notification of errors, complete these steps:

1 From the browser view, in the *Address* text-box type in the printer's IP address.

The *Printer Home Page* opens.

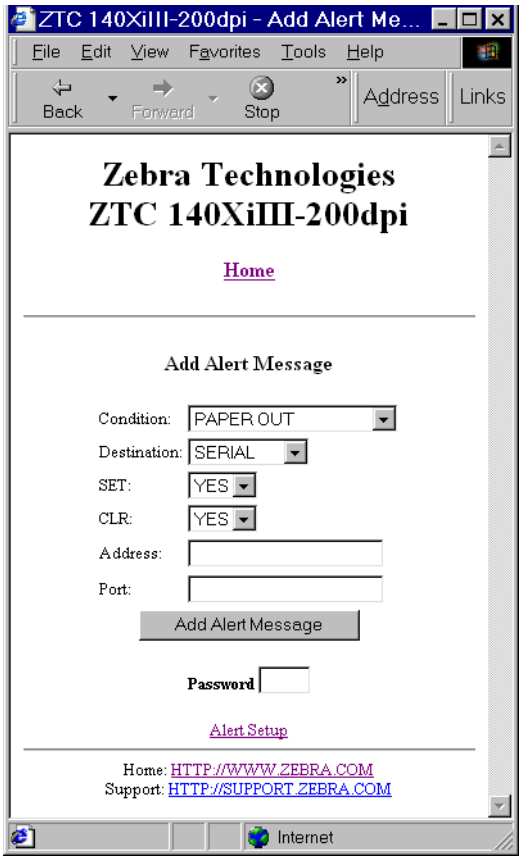


2 From the *Printer Home Page*, click Alert Setup.

The Alert Setup page shows a list of message notifications and their respective destinations (if no notifications are listed).

3 To set up email notification, go to the *Alert Setup* page and click Add Alert Message.

The *Add Alert Message* page opens:



Important • The printer accepts only the last configuration made.

4 Specify the condition to send over email, such as `HEAD ELEMENT BAD` or `PAPER OUT`.

5 Set destination to Email.

6 Enter a valid email address for the messages to be sent to.

Example • `admin@yourcompany.net` (The Port field can be ignored for email setup.)

Warning • A password is required. If you forget to enter the password, the alerts you just set are deleted.

7 Click Add Alert Message.

To receive email alert you must give 10/100 PS the IP address of your mail server that is running SMTP.

8 To save current settings, click Save Printer Setting.

9 Enter the password and click Save Current Configuration.

10 You can continue to add more Alerts, if finished:

- From the Printer Home Page, select PrintServer Settings>Network Communications Setup.
- Click SMTP Email Alerts.

Note • The *SMTP Server* address might be referred to as *Mail Server* address.

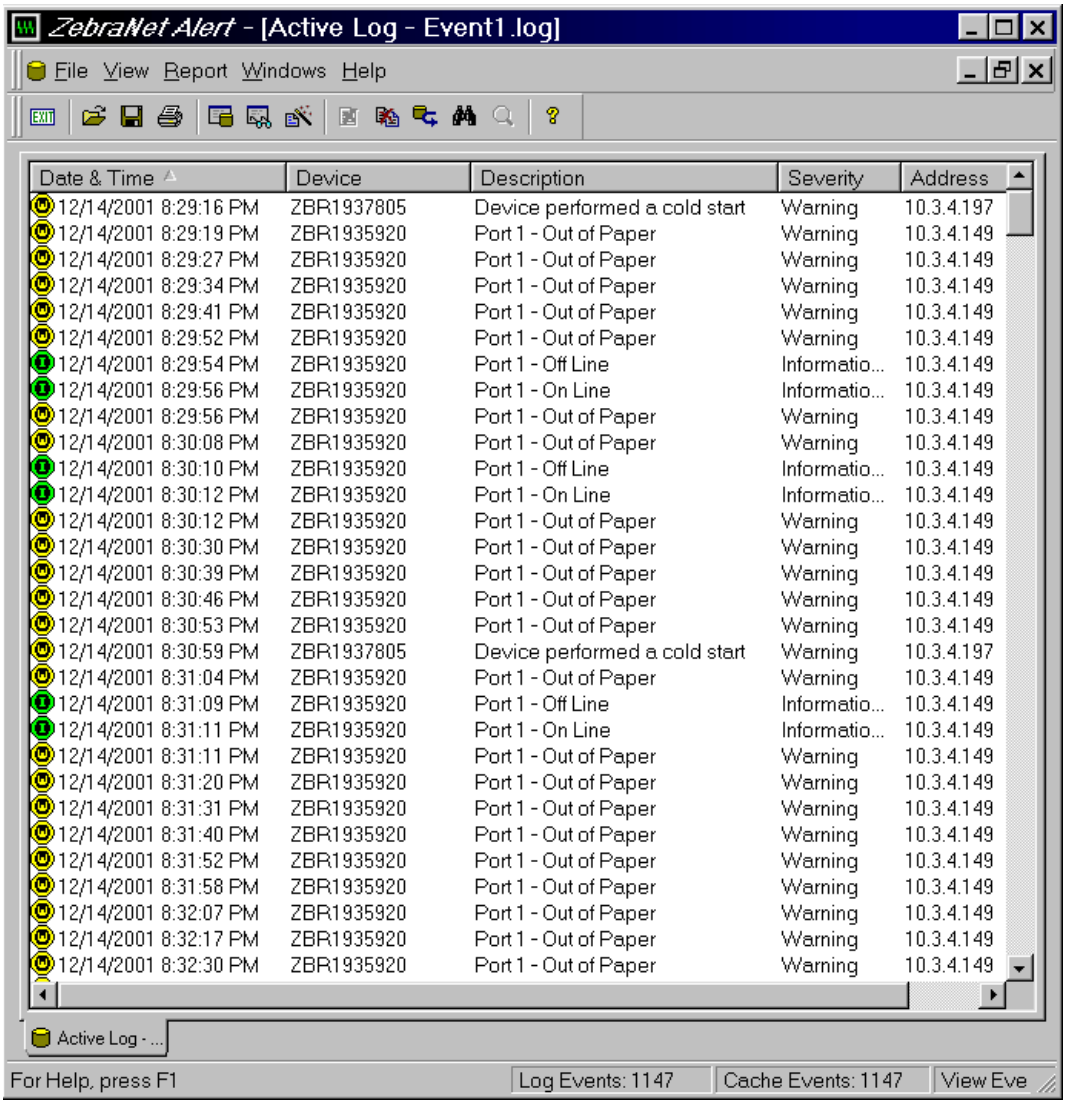
- Specify your SMTP server address.

When these steps are done, you can begin receiving email notification messages.

To monitor alerts, complete these steps:

1 From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet Alert.

The *Active Log* dialog opens, displaying a list of all the logged alerts:


ZebraNet Alert - [Active Log - Event1.log]
File View Report Windows Help
Date & Time | Device | Description | Severity | Address
12/14/2001 8:29:16 PM | ZBR1937805 | Device performed a cold start | Warning | 10.3.4.197
12/14/2001 8:29:19 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:29:27 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:29:34 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:29:41 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:29:52 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:29:54 PM | ZBR1935920 | Port 1 - Off Line | Informatio... | 10.3.4.149
12/14/2001 8:29:56 PM | ZBR1935920 | Port 1 - On Line | Informatio... | 10.3.4.149
12/14/2001 8:29:56 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:30:08 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:30:10 PM | ZBR1935920 | Port 1 - Off Line | Informatio... | 10.3.4.149
12/14/2001 8:30:12 PM | ZBR1935920 | Port 1 - On Line | Informatio... | 10.3.4.149
12/14/2001 8:30:12 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:30:30 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:30:39 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:30:46 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:30:53 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:30:59 PM | ZBR1937805 | Device performed a cold start | Warning | 10.3.4.197
12/14/2001 8:31:04 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:31:09 PM | ZBR1935920 | Port 1 - Off Line | Informatio... | 10.3.4.149
12/14/2001 8:31:11 PM | ZBR1935920 | Port 1 - On Line | Informatio... | 10.3.4.149
12/14/2001 8:31:11 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:31:20 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:31:31 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:31:40 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:31:52 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:31:58 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:32:07 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:32:17 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
12/14/2001 8:32:30 PM | ZBR1935920 | Port 1 - Out of Paper | Warning | 10.3.4.149
Active Log - ...
For Help, press F1
Log Events: 1147
Cache Events: 1147
View Eve

2 From this dialog, you can track the printer(s) activity and status.

3 From the menu bar, you can explore all the other features, such as Reports.

Checking 10/100 PS Configuration Settings

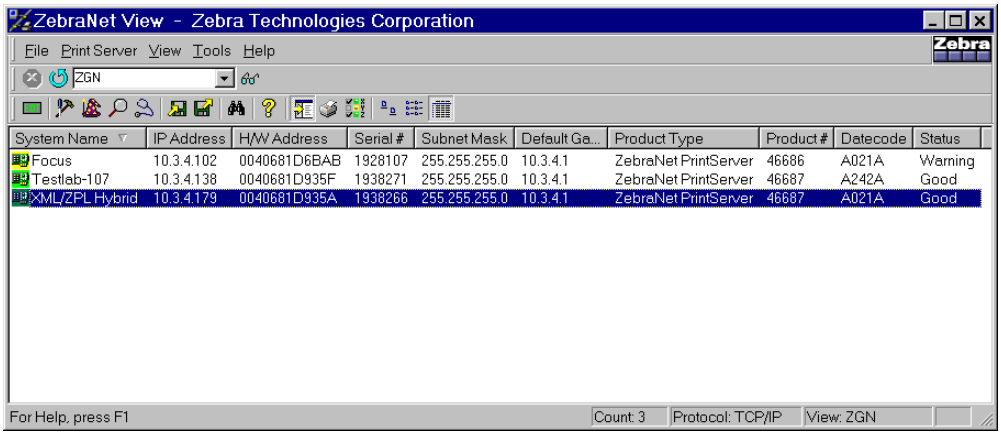
This section provides steps on how to check 10/100 PS's configuration settings using ZebraNet View and a browser.

ZebraNet View

To check configuration settings, complete these steps:

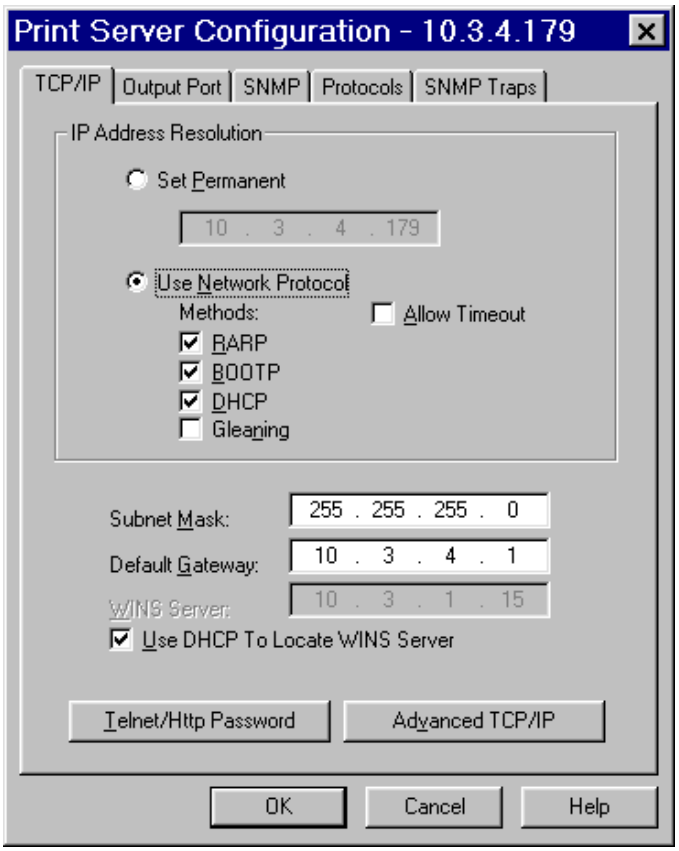
1 From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet View.

The *ZebraNet View* dialog opens:


ZebraNet View - Zebra Technologies Corporation
File Print Server View Tools Help
Zebra
ZGN
System Name IP Address H/W Address Serial # Subnet Mask Default Ga... Product Type Product # Datecode Status
Focus 10.3.4.102 0040681D6BAB 1928107 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46686 A021A Warning
Testlab-107 10.3.4.138 0040681D935F 1938271 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46687 A242A Good
XML/ZPL Hybrid 10.3.4.179 0040681D935A 1938266 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46687 A021A Good
For Help, press F1
Count: 3
Protocol: TCP/IP
View: ZGN

2 From the menu bar, select Print Server>Configuration.

The *Print Server Configuration* dialog opens:



This dialog offers multiple tabs to choose from. Each tab contains various configuration settings that you can change.

For details on the configurations, see page 108.

Browser

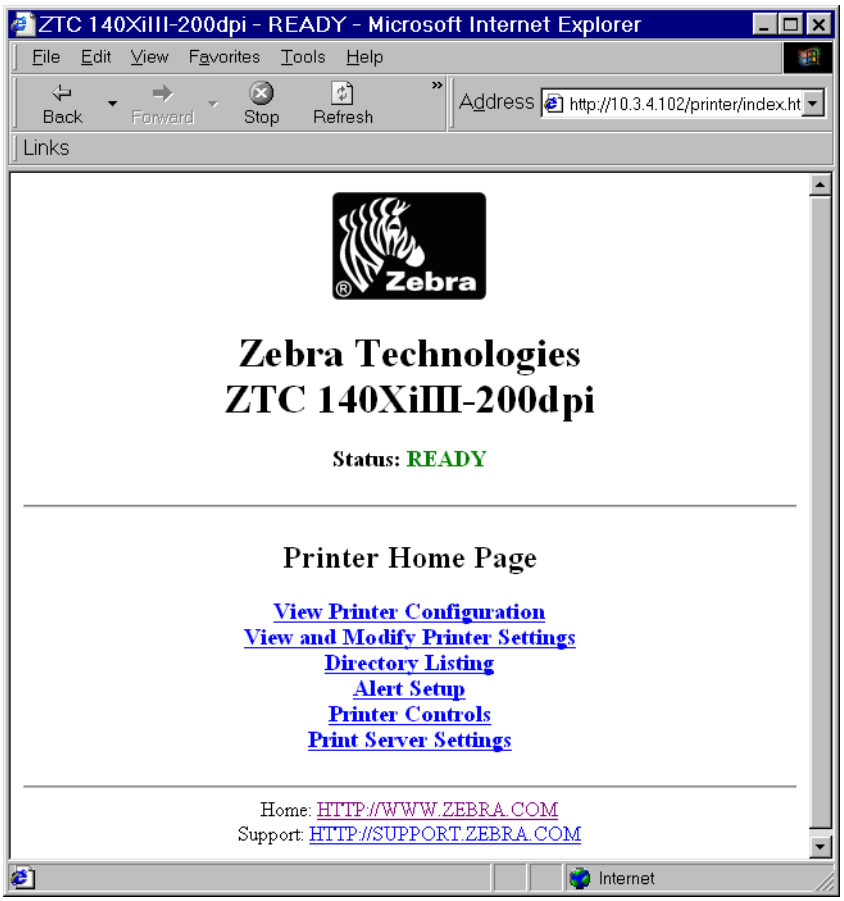
This section provides steps on how to check 10/100 PS's configuration settings using its Web pages.

To access the 10/100 PS settings, complete these steps:

1. Open a Web browser.
2. In the *Address* text-box, type your printer's IP address, then press Enter.

Your browser page looks similar to this:

Note • Your printer firmware determines how this page looks. This page is from a printer with firmware x.10 and above.



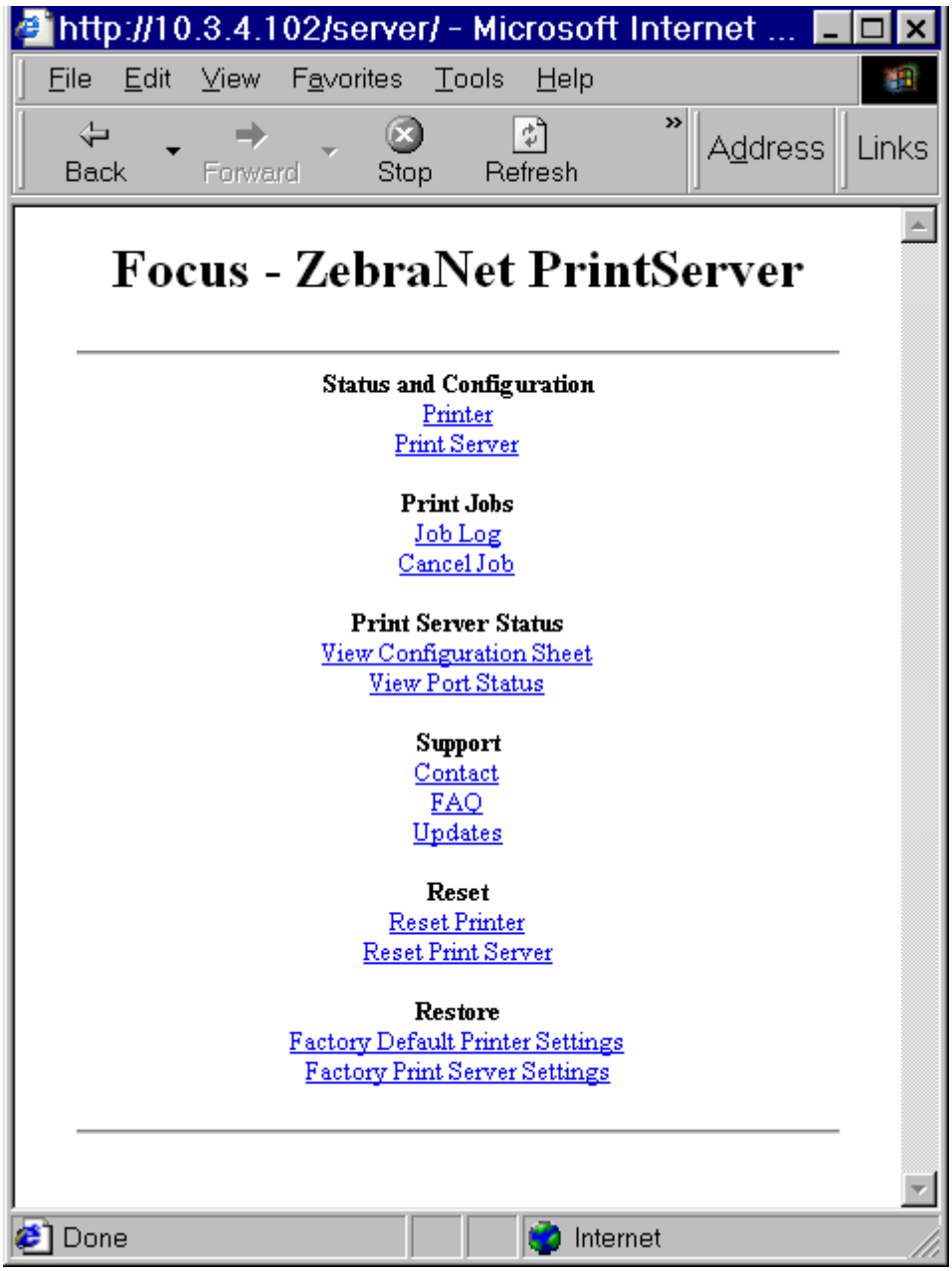
3 From the *Printer Home Page*, click Print Server Settings.

The default User ID and password are required.

Important • The illustration of the Printer Server Settings page is based on a ZPL printer. If you have an EPL printer, the menu options on the Print Server page are slightly different.

The *Print Server Configuration Page* opens:

Note • Your printer firmware determines how this page looks. This page is from a printer with firmware x.10 and below.



To access the 10/100 PS settings, complete these steps:

1 From the *Print Server* page, click Print Server.

The *Print Server Configuration* page opens:

2 For details on the configuration choices, see *To check configuration settings, complete these steps: on page 31*.

Setting up a ZebraNet Connect IP

ZebraNet Connect IP allows you to send jobs to print servers that use Dynamic IP addresses (DHCP). It also notifies you of printer errors, such as ***paper out*** or ***head open***. When print jobs are printed through ZebraNet Connect IP, they are sent directly to 10⁄100 PS and are not routed through a network server, resulting in a reduction of network traffic.

Note • The DHCP feature of ZebraNet Connect IP can rediscover a 10⁄100 PS on the local subnet, even when its IP address might be changing (e.g., when using DHCP for IP address resolution). The 10⁄100 PS is relocated by its port name as configured through ZebraNet View (the default name is Serial Number-Port Number). This feature is enabled on the local subnet only. A non-local 10⁄100 PS device is not rediscovered if the IP address changes.

If you have printing problems while using the ZebraNet Connect IP printing port, you may check the status of the port or change its settings through the printer Properties dialog.

- For Windows 95/98, select Port Settings under the Details tab.
- For Windows NT 4.0 or Windows 2000, select Configure Port under the Ports tab.

Windows NT 4.0/Windows 2000

If you are using the Windows NT 4.0 or Windows 2000 operating system, use the following procedure to set up a printer port for the 10⁄100 PS.

1. From the task bar, select Start>Settings>Printers.
2. Select the Windows printer to use when printing with the 10⁄100 PS.
3. From the menu bar, select File>Properties.
4. To add a ZebraNet Connect IP port, in the Ports tab select Add Port.
5. From the list of Available Printer Ports, select *ZebraNet Connect Monitor* as the type of port to add, and click New Port.

Note • If ZebraNet Connect IP monitor is not listed, verify that the ZebraNet Connect IP software has been properly installed. To do this, you need to reinstall the software and choose Modify.

You enter into the Add ZebraNet Connect Port screen, where there is a list of all 10/100 PS devices available on the local subnet.

- The TCP/IP monitor searches only the local subnet.

6 If the port you want to add is listed in the Ports Available on Local Subnet window, select the port name. If the port you want to use is not listed, you can:

- Select Cancel and repeat step 5 to rediscover the print servers.
- In ZebraNet Connect, click the Locate Non-local Device button and enter the static TCP/IP Address used for the 10/100 PS.

Note • The ZebraNet Connect for TCP/IP DHCP discovery feature relocates a 10/100 PS device on the local subnet by its port name, even if the IP address changes. This feature is enabled on the local subnet only. A non-local 10/100 PS device is not rediscovered if the IP address changes.

7 Click Add.

8 To close the *Printer Ports* dialog, click Cancel.

9 To save the configuration, click OK.

Now you can use ZebraNet Connect. Whenever you print to the Windows printer configured with ZebraNet Connect, your print job will go directly to the ZebraNet 10/100 PS port.

Windows 95/98/Me

To set up a 10/100 PS port using Windows 95/Windows 98/Me, complete these steps:

1 From the task bar, select Start>Settings>Printers.

2 Select the Windows printer that you want to print with ZebraNet Connect IP.

Note • Under Windows 95, you have to set up the printer for a local port first, then open Properties from the File menu and continue with the configurations.

3 From the file menu, select File>Properties.

4 To add a ZebraNet Connect IP port, in the *Details* tab select Add Port.

5 From the *Add Port* dialog, select Other, then select the ZebraNet Connect Monitor as the type of port to add.

6 Click OK.

Note • If ZebraNet Connect IP is not listed, verify that the software has been properly installed.

The Add ZebraNet Connect Port screen opens. There is a list of all 10⁄100 PS devices discovered on the network.

- The TCP/IP monitor searches only the local subnet.

7 If the port you want to add is listed in the Ports Available on Local Subnet window, select the port name. If the port you want to use is not listed, you can:
   - Select Cancel and repeat step 5 to rediscover the 10⁄100 PS devices.
   - In ZebraNet Connect IP, click the Locate Non-local Device button and enter the static TCP/IP address used for the 10⁄100 PS.
8 Click Add.
9 To save the configuration, click OK.

Now you can use ZebraNet Connect IP. Whenever you print to the Windows printer configured with ZebraNet Connect IP, your print job will go directly to the 10⁄100 PS port.

Enabling Protocols

You can enable protocols with WebView or ZebraNet View. This section provides you with directions for accessing and enabling protocols using both WebView and ZebraNet View.

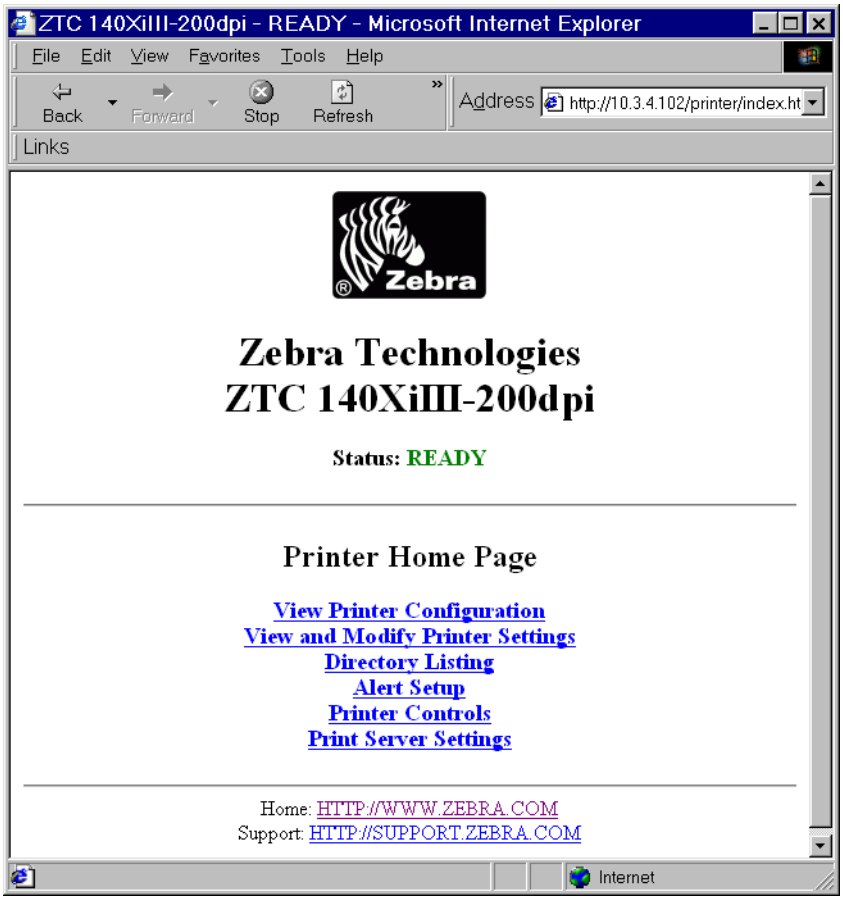
WebView

This section contains directions for accessing protocols using WebView. The browser illustrations were captured from a ZebraLink-enabled printer.

To enable protocols using WebView, complete these steps:

1. Open a Web browser.
2. In the *Address* text-box, type your printer's IP address, then press Enter.

Your browser page looks similar to this:



3 From the *Printer Home Page*, click Print Server Settings.

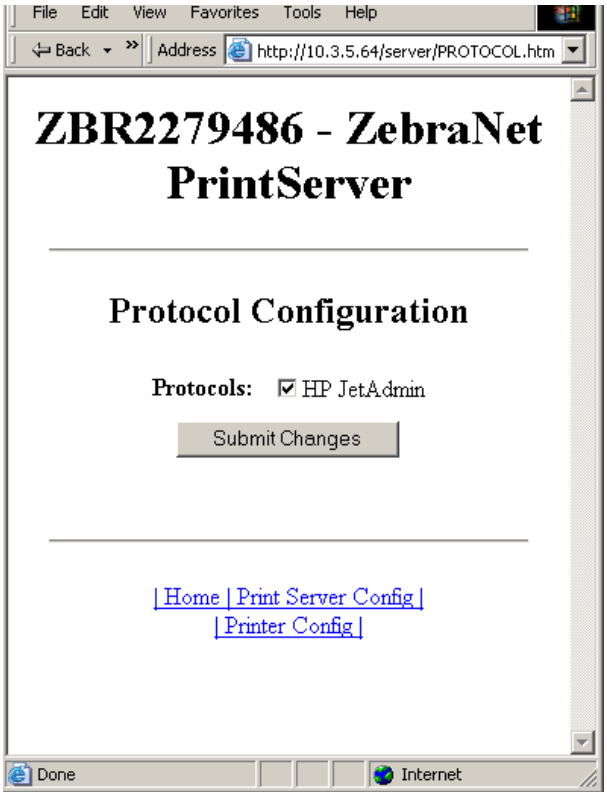
The default User ID and password are required.

4 From the *Print Server* page, click Print Server.

The *Print Server Configuration* page opens:

5 From the *Print Server Configuration* page, click Enabled Protocols.

The *Protocol Configuration* page opens:



6 Select the protocols you want to enable, then click Submit Changes.

You get a confirmation to reset the unit for changes to take place.

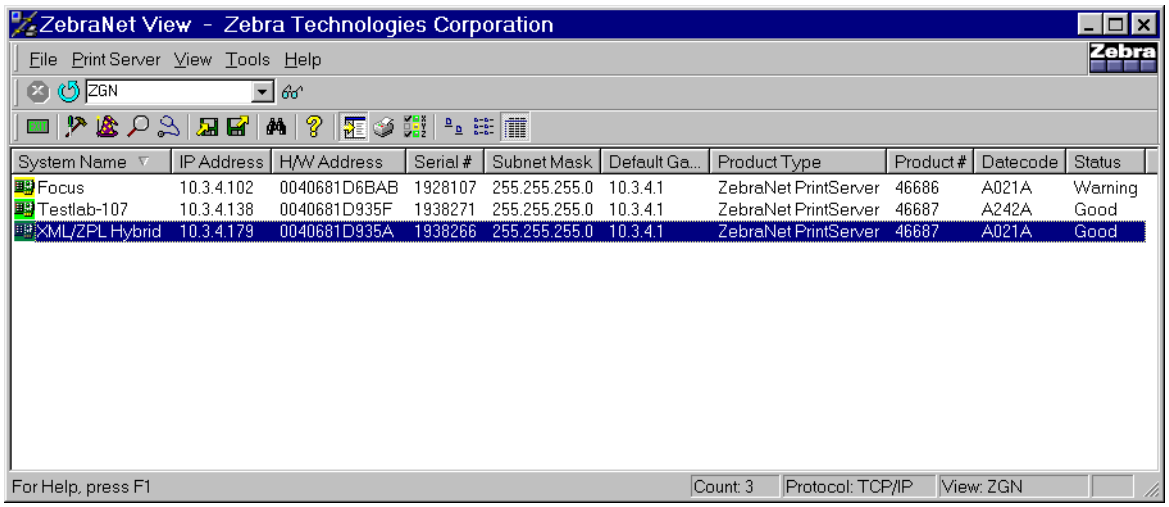
ZebraNet View

This section contains directions for accessing protocols using ZebraNet View.

To enable protocols using WebView, complete these steps:

1 From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet View.

The *ZebraNet View* dialog opens:


ZebraNet View - Zebra Technologies Corporation
File Print Server View Tools Help
Zebra
ZGN
System Name | IP Address | H/W Address | Serial # | Subnet Mask | Default Ga... | Product Type | Product # | Datecode | Status
Focus | 10.3.4.102 | 0040681D6BAB | 1928107 | 255.255.255.0 | 10.3.4.1 | ZebraNet PrintServer | 46686 | A021A | Warning
Testlab-107 | 10.3.4.138 | 0040681D935F | 1938271 | 255.255.255.0 | 10.3.4.1 | ZebraNet PrintServer | 46687 | A242A | Good
XML/ZPL Hybrid | 10.3.4.179 | 0040681D935A | 1938266 | 255.255.255.0 | 10.3.4.1 | ZebraNet PrintServer | 46687 | A021A | Good
For Help, press F1
Count: 3
Protocol: TCP/IP
View: ZGN

2. From the menu bar, select Print Server>Configuration.
3. Click the *Protocols* tab.

   The *Protocols* tab opens.
4. Select the protocols you want to enable, then click OK.

   A confirmation message opens.
5. To accept changes, click OK.

Defaulting the 10/100 PS

This section provides you with instructions for defaulting the 10/100 PS to factory settings using WebView, ZebraNet View, and the Test button.

WebView

To default the 10/100 PS to factory settings using WebView, complete these steps:

1 From the *ZebraNet PrintServer* view, click Factory Print Server Settings.

The *Restore to Factory Defaults* page opens:

2 Enable the check box of the settings you want to reset, and click Submit Changes.

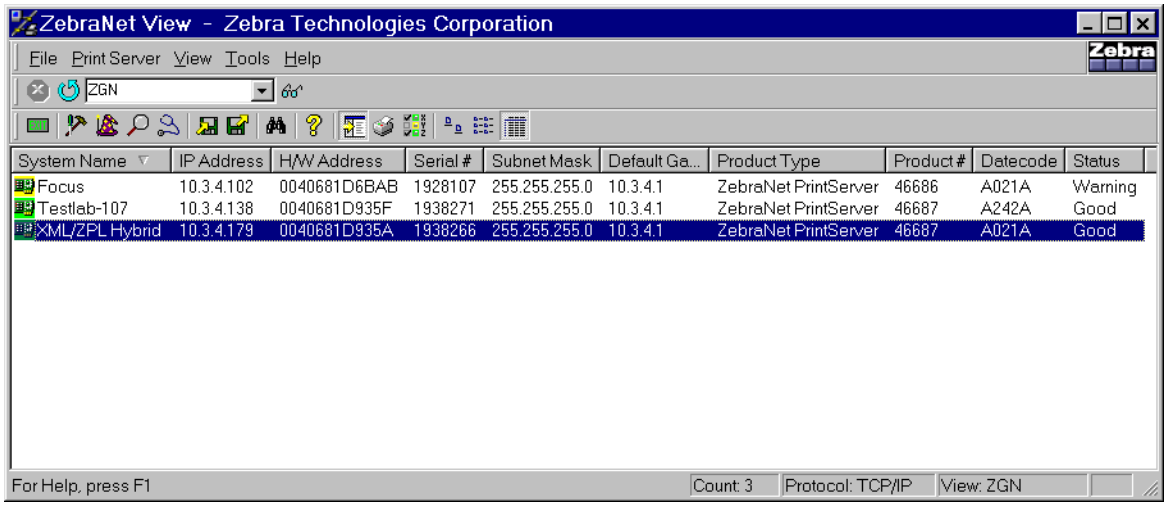
Important • With the reset command on its way to the 10/100 PS, the HTTP of WebView connection is unavailable while the 10/100 PS re-initializes. You need to reassign TCP/IP settings and open a new browser session.

ZebraNet View

To default 10/100 PS to factory settings using ZebraNet View, complete these steps:

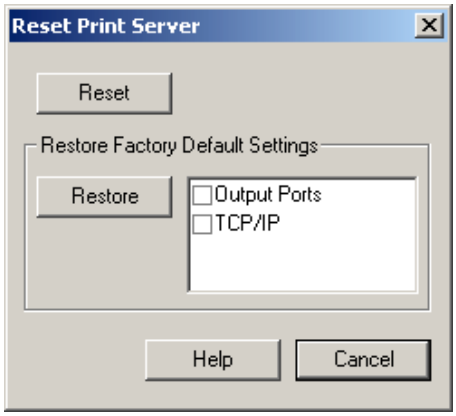
1 From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet View.

The *ZebraNet View* dialog opens:


ZebraNet View - Zebra Technologies Corporation
File Print Server View Tools Help
Zebra
ZGN
System Name IP Address H/W Address Serial # Subnet Mask Default Ga... Product Type Product # Datecode Status
Focus 10.3.4.102 0040681D6BAB 1928107 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46686 A021A Warning
Testlab-107 10.3.4.138 0040681D935F 1938271 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46687 A242A Good
XML/ZPL Hybrid 10.3.4.179 0040681D935A 1938266 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46687 A021A Good
For Help, press F1
Count: 3
Protocol: TCP/IP
View: ZGN

2 From the menu bar, select Print Server>Reset.

The *Reset Print Server* dialog opens:



3 Select the settings you want to reset, then click Restore.

Test Button

To default the 10/100 PS to factory settings using the Test button, complete these steps:

1 The printer is turned off **(O)**.

The Test button is a small hole on the 10/100 PS device. To press the Test button, you need to insert something small into the hole, like a paperclip.

2 With the printer turned off, press and hold the Test button on the 10/100 PS device and turn on the printer.

3 The status indicator tells you when 10/100 PS has been reset to factory defaults, as follows:

- If an active network cable is connected to the 10/100 PS, the status indicator turns solid **green**. When this happens, you can release the Test button.
- If there is **not** an active network cable connected to the 10/100 PS, the status indicator flashes **green**. When this happens, you can release the Test button.
- For more details on status indicators, see *10/100 PS Status Indicator on page 124*.

CHAPTER 3

Installation

This chapter provides information on how to install the 10/100 PS and the ZebraNet Utilities.

Contents

External 10/100 PS **48**
Internal 10/100 PS. **52**
ZebraNet Utilities. **56**
ZebraNet View Java Applet. **60**

External 10/100 PS

This section provides you with an illustration of the external 10/100 PS and the steps required for its installation.

Before you begin

Important • Before you install the external 10/100 PS, you might need to upgrade your printer firmware.

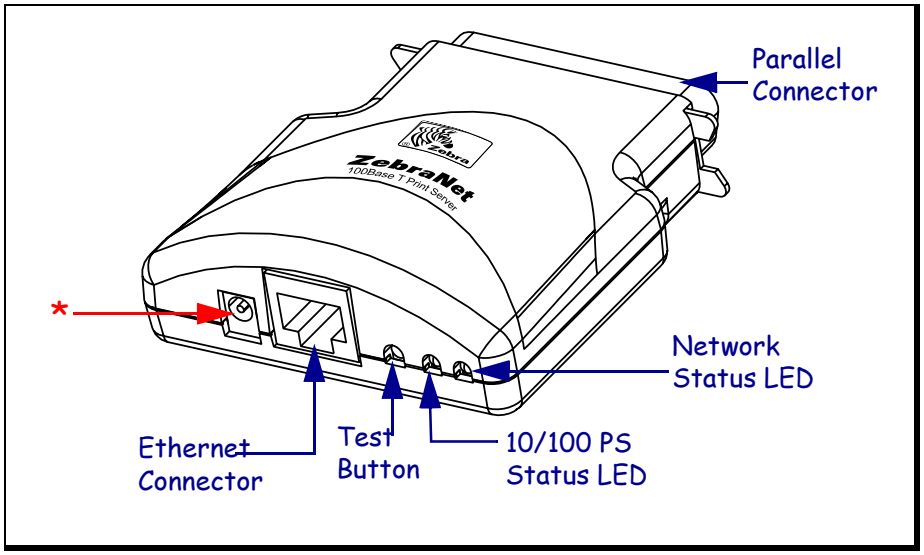
To upgrade you printer firmware, complete these steps:

1. If your printer has firmware x.12 firmware, you **must** upgrade your printer firmware to version 60.13.x or higher.
2. To upgrade your firmware, either:
   - retrieve it from this CD
   - for the most current version of firmware visit the Zebra Web site
3. To confirm the upgrade was successful:
   - If your printer has an LCD, look at the lower right hand corner and confirm the version of firmware that is on your printer.
   - If you printer does not have an LCD, print out a configuration label to see the version of firmware that is on your printer.

Illustration

This illustration shows an external 10/100 PS. The callouts identify the important components:

Important • The * callout indicates a feature that is not supported on this release. The connector (*) is **covered** on the current 10/100 PS units.



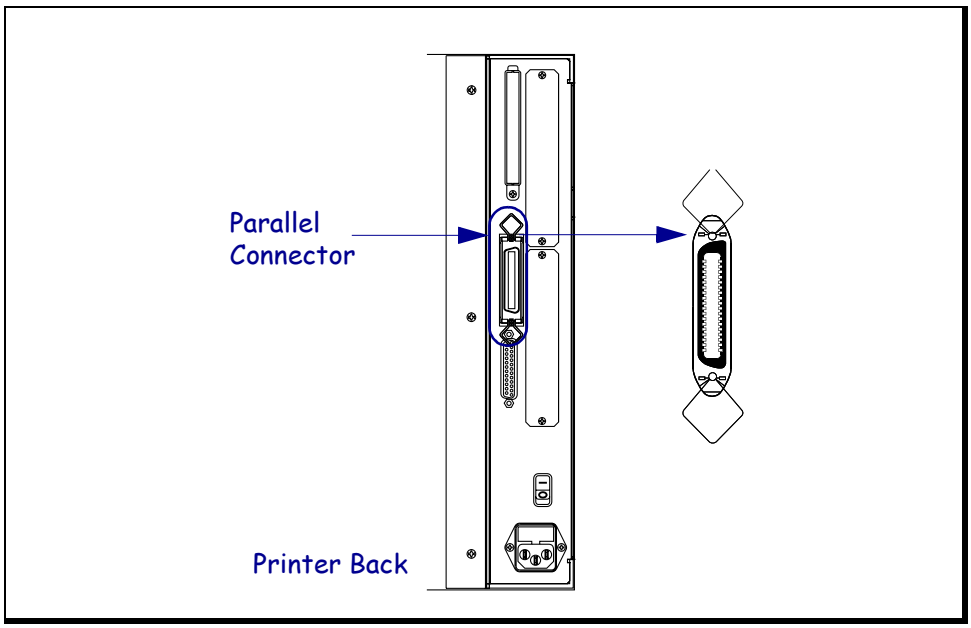
Note • When necessary, refer back to this illustration during the installation steps.

To install an external 10/100 PS, complete these steps:

4 Turn off **(O)** the printer.

5 On the back of the printer, connect the 10/100 PS device into the parallel port.

This illustration calls out the location and provides an enlarged illustration of the parallel port:



6 Secure the wire locks.

7 On the back of the 10/100 PS, connect an active ethernet cable to the RJ-45 connector Ethernet connector.

8 Turn on **(I)** the printer.

The 10/100 PS performs a Power On Self Test (POST). This takes about 45 seconds. During the POST, the 10/100 PS Status LED (just below the TEST button) turns red and flashes on and off. Once the POST is successfully completed and the 10/100 PS is fully initialized, the 10/100 PS Status LED turns green.

For more details on status indicators, see *10/100 PS Status Indicator on page 124*.

Note • If there is not an active Ethernet cable attached to the 10/100 PS, the LED indicator turns green and rapidly flashes on and off.

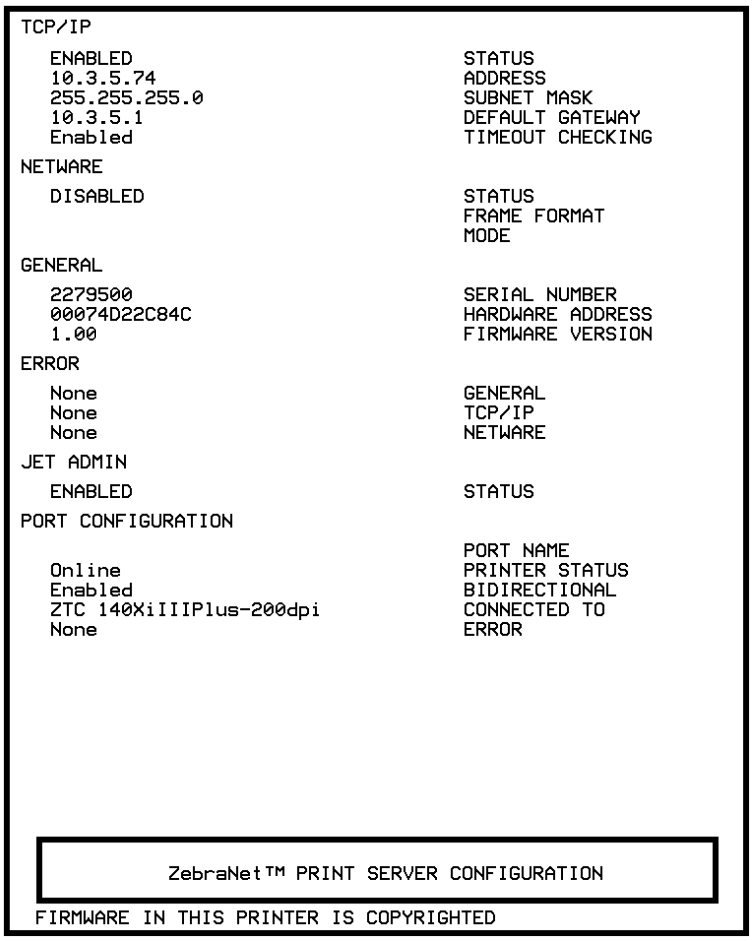
9 To check the status of the 10/100 PS, press the Test button located on the back of the 10/100 PS.

The prints out a configuration label of the 10/100 PS.

This table shows you how to determine the minimum label width needed to print a 10/100 PS configuration label:

DPI	Inches	MM
600	1.25	31.75
300	2.50	63.50
200	3.69	93.73
150	5.0	127.00

This is an example of a 10/100 PS configuration label.



Internal 10/100 PS

This section provides you with an illustration of the internal 10/100 PS and installation steps.

Before you begin

Important • Before you install the external 10/100 PS, you might need to upgrade your printer firmware.

To upgrade you printer firmware, complete these steps:

10 If your printer has firmware x.12 firmware, you **must** upgrade your printer firmware to version 60.13.x or higher.

11 To upgrade your firmware, either:

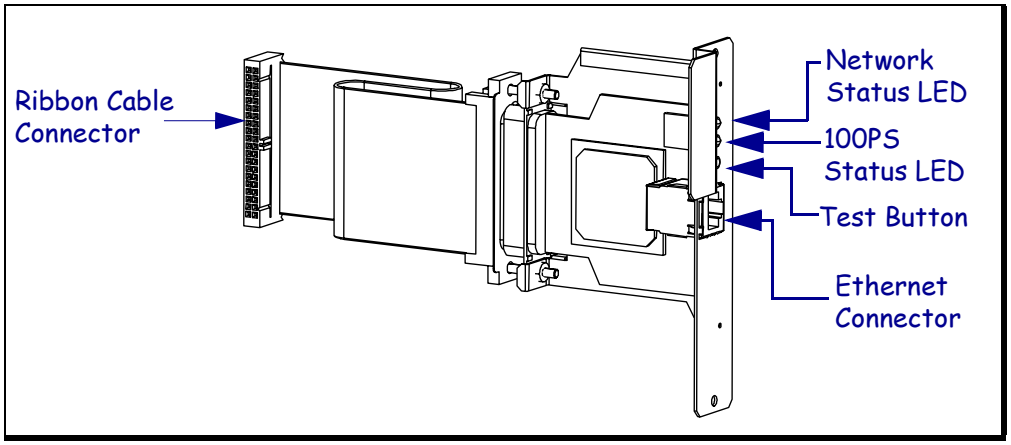
- retrieve it from this CD
- for the most current version of firmware visit the Zebra Web site

12 To confirm the upgrade was successful:

- If your printer has an LCD, look at the lower right hand corner and confirm the version of firmware that is on your printer.
- If you printer does not have an LCD, print out a configuration label to see the version of firmware that is on your printer.

Illustration

This illustration shows you the internal 10/100 PS that can be installed into XiIII*Plus* and 105*SL* printers. The callouts identify important components:



Caution • This installation must be performed by a qualified service technician.

Electric Shock Caution • Turn Off **(O)** the printer and disconnect it from the power source before preformating these procedures.

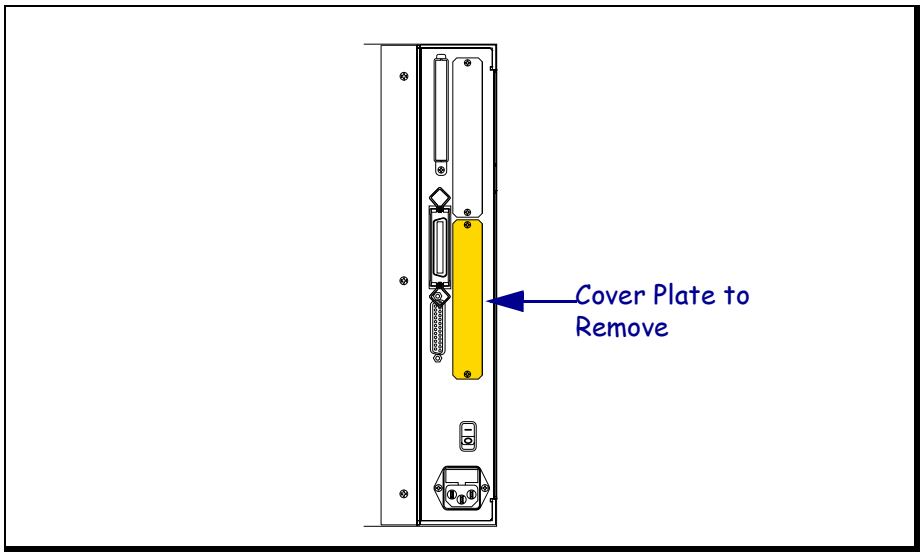
Electrostatic Discharge Caution • Observe proper electrostatic safety precautions when handling any static-sensitive components such as circuit boards and printheads.

To install an internal 10/100 PS, complete these steps:

Tools • These are the tools you need for the installation:

- #1 Phillips screwdriver
- 3/32 in. Allen (Hex) wrench

1. Turn off **(O)** the printer and disconnect the AC power cord.
2. On the back of the printer, remove the two screws and the cover plate shaded in this illustration:



3. To remove the electronics panel, remove the screws and then remove the cover.

Note • The parallel port on the back of the printer is not operational when the internal 10/100 PS is installed. The hardware of the 10/100 PS mounting bracket covers the parallel port.

4. Through the mounting slot, insert the ribbon cable and 10/100 PS.
5. Fold the cable back over the mounting bracket, and connect the ribbon cable connector into the keyed Interface Data Cable Connector (J4) on the main logic board.
6. Secure the 10/100 PS interface board in place with the cover plate screws that you removed earlier in this step sequence.
7. Confirm that all small cable connectors are tight.
8. Reinstall the electronics cover that you removed earlier in this step sequence.

Note • This kit includes a label printed with the Ethernet MAC hardware address for the 10/100 PS. Remove the backing from the label and affix it to the back of the printer.

9. Reconnect the AC power cord and turn the printer on **(I)**.
10. Consult your System Administrator before configuring the 10/100 PS for your network.

ZebraNet Utilities

The ZebraNet Utilities is a software suite consisting of tools to assist you with the configuration of the 10⁄100 PS device, which gives you the flexibility to make changes to settings, track errors, and more.

If you want to be certain you have the most recent version of the ZebraNet Utilities, you can visit our Web site and download the most recent version.

For more details, see *Overview on page 2* or *ZebraNet Utilities on page 107*.

Note • Contact your System Administrator before installing this software. You must have Administrator rights on your network to install most of these utilities.

To install the ZebraNet Utilities, complete these steps:

The steps that follow reflect the steps and dialogs for a *typical* installation. If you plan to conduct a *custom* installation, the dialogs you encounter or see will differ from those in this step sequence.

1 Insert the CD-ROM into the drive.

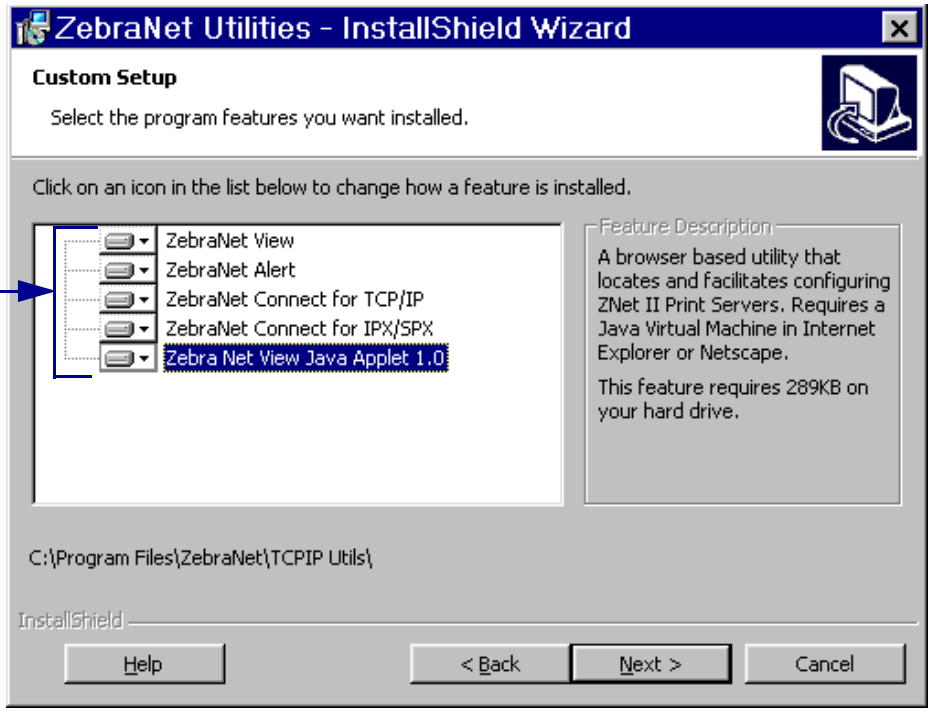
Important • Is AutoPlay enabled on your computer?

- **Yes**. Your computer automatically launches the installation.
- **No**. You need to navigate to the `Software>ZebraNet Util>setup.exe` on the CD-ROM and manually launch the installation.

2 Click Next>.

This illustration shows the dialog box that lets you select the utilities that you want to install:

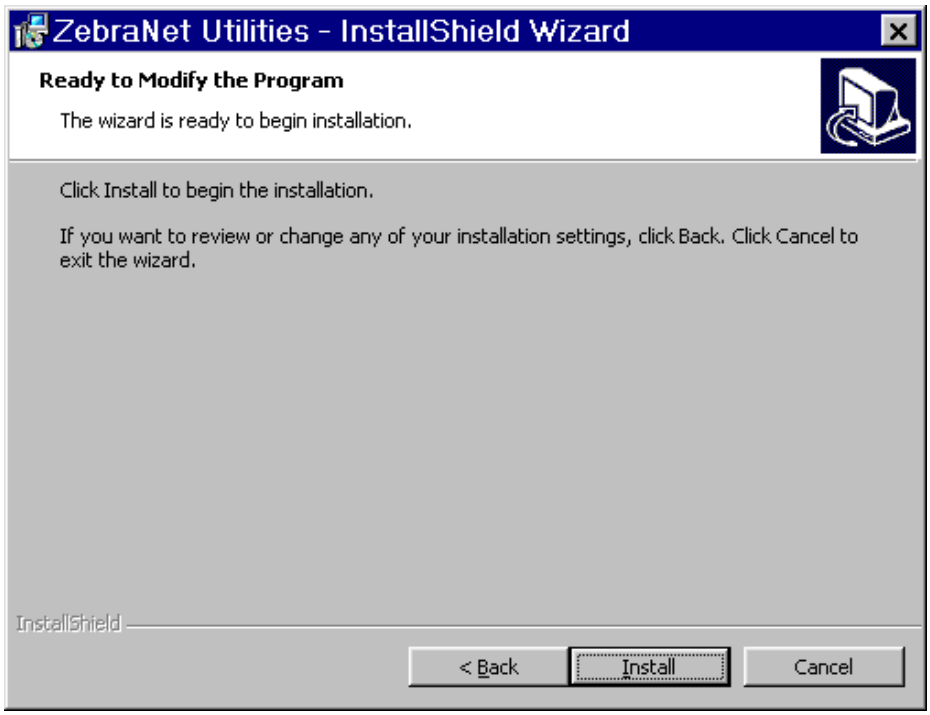
Each of these has drop-down menus to choose from.


ZebraNet Utilities - InstallShield Wizard
Custom Setup
Select the program features you want installed.
Click on an icon in the list below to change how a feature is installed.
ZebraNet View
ZebraNet Alert
ZebraNet Connect for TCP/IP
ZebraNet Connect for IPX/SPX
Zebra Net View Java Applet 1.0
Feature Description
A browser based utility that locates and facilitates configuring ZNet II Print Servers. Requires a Java Virtual Machine in Internet Explorer or Netscape.
This feature requires 289KB on your hard drive.
C:\Program Files\ZebraNet\TCPIP Utils\
InstallShield
Help
< Back
Next >
Cancel

Important • If you installed ZebraNet View Java Applet, you must complete the installation steps for *ZebraNet View Java Applet on page 60*.

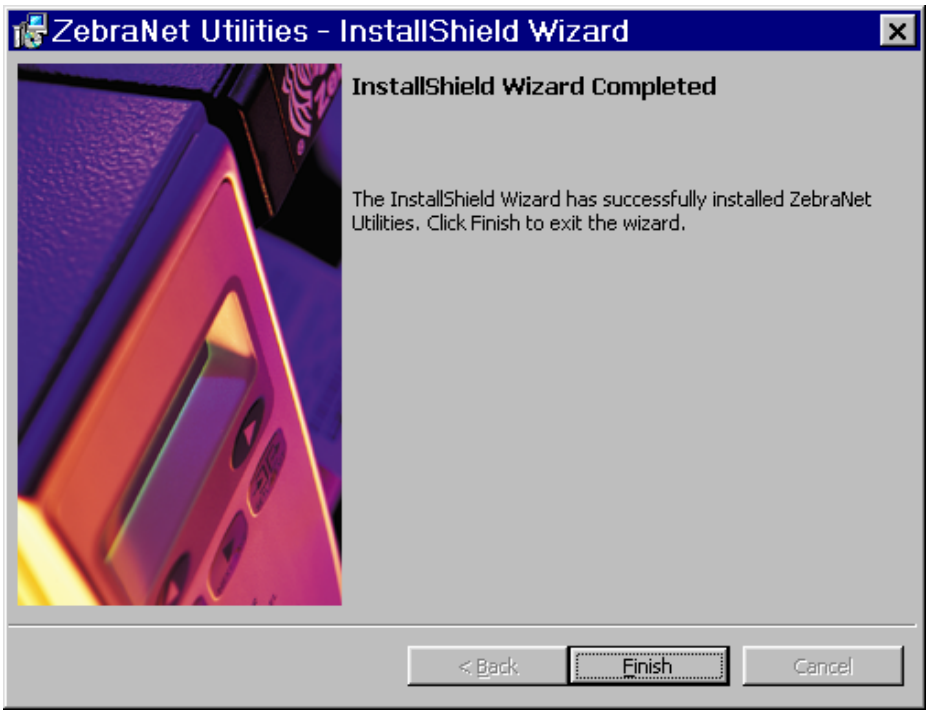
3 In the *ZebraNet Utilities dialog*, select the features you want to install and click Next>.

This illustration gives you the chance to reset your installation settings:


ZebraNet Utilities - InstallShield Wizard
Ready to Modify the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

4 In the *ZebraNet Utilities* dialog, you have the option to review and make any changes to your installation settings. When you are satisfied with your installation settings, click Install.

When the installation is complete, this dialog opens:


ZebraNet Utilities - InstallShield Wizard
InstallShield Wizard Completed
The InstallShield Wizard has successfully installed ZebraNet Utilities. Click Finish to exit the wizard.
< Back
Finish
Cancel

5 Click Finish.

Important • When the installation is complete, you need to restart your system for the changes to take place.

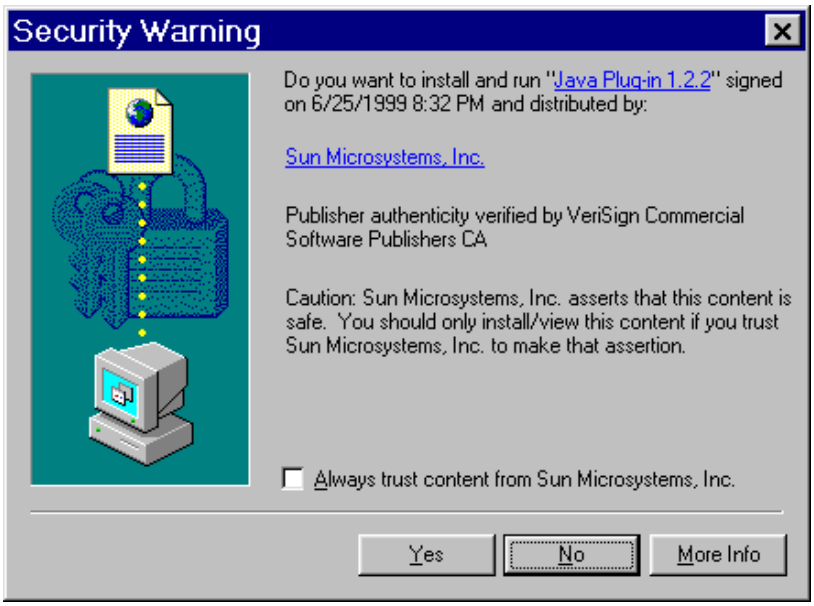
ZebraNet View Java Applet

If you selected ZebraNet View Java Applet when you were installing the ZebraNet Utilities, you need to complete a few installation steps to work with this utility.

To install ZebraNet View Java Applet, complete these steps:

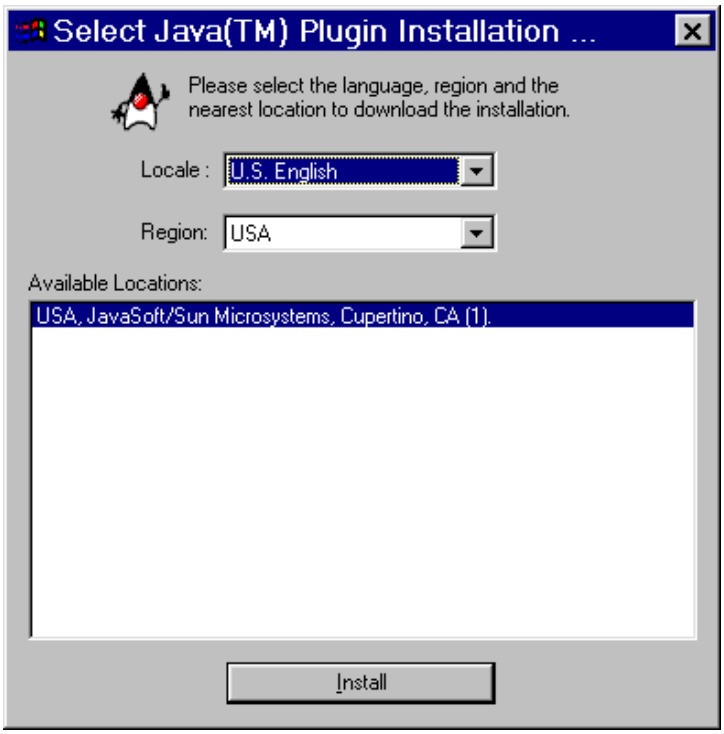
1 From the task bar, select Programs>ZebraNet Utilities>ZebraNet View Java Applet 1.0.

This *Security Warning* dialog opens:


Security Warning
Do you want to install and run "Java Plug-in 1.2.2" signed on 6/25/1999 8:32 PM and distributed by:
Sun Microsystems, Inc.
Publisher authenticity verified by VeriSign Commercial Software Publishers CA
Caution: Sun Microsystems, Inc. asserts that this content is safe. You should only install/view this content if you trust Sun Microsystems, Inc. to make that assertion.
Always trust content from Sun Microsystems, Inc.
Yes
No
More Info

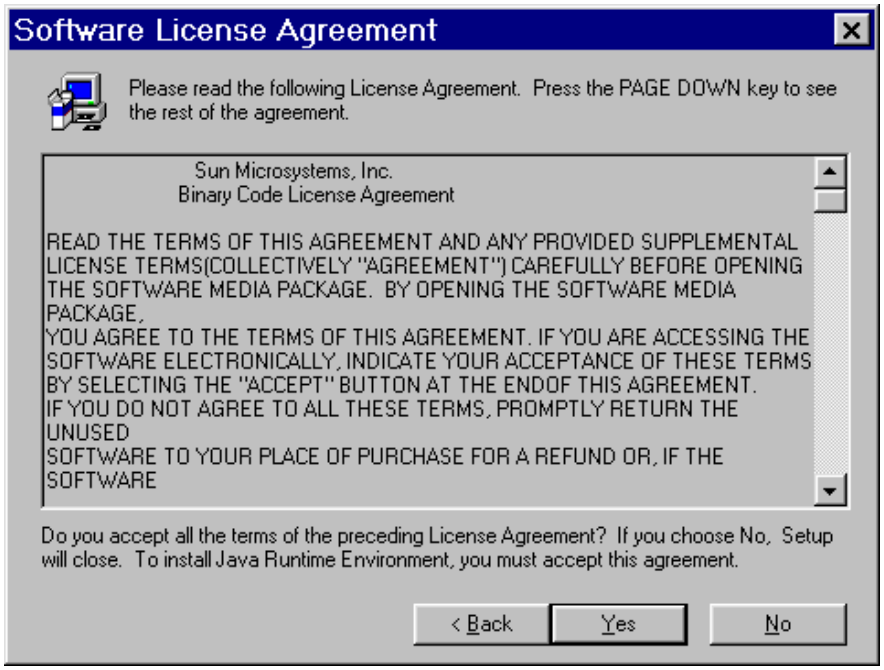
2 To begin the installation, click Yes.

The *Select Java Plugin Installation* dialog opens:



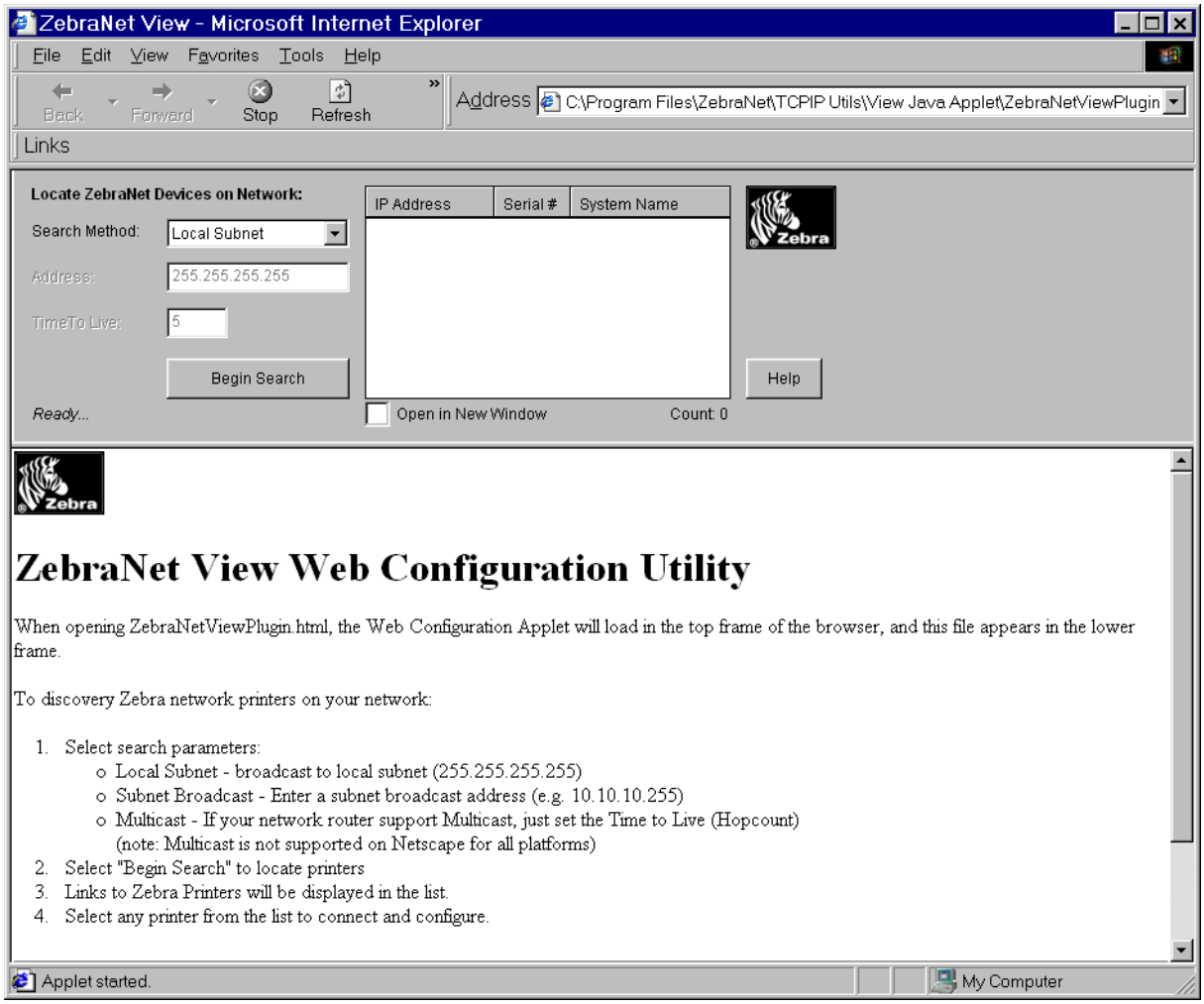
3 Make the selections that apply to your environment, and click Install.

The *Software License Agreement* opens.


Software License Agreement
Please read the following License Agreement. Press the PAGE DOWN key to see the rest of the agreement.
Sun Microsystems, Inc.
Binary Code License Agreement
READ THE TERMS OF THIS AGREEMENT AND ANY PROVIDED SUPPLEMENTAL LICENSE TERMS(COLLECTIVELY "AGREEMENT") CAREFULLY BEFORE OPENING THE SOFTWARE MEDIA PACKAGE. BY OPENING THE SOFTWARE MEDIA PACKAGE,
YOU AGREE TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ACCESSING THE SOFTWARE ELECTRONICALLY, INDICATE YOUR ACCEPTANCE OF THESE TERMS BY SELECTING THE "ACCEPT" BUTTON AT THE ENDOF THIS AGREEMENT.
IF YOU DO NOT AGREE TO ALL THESE TERMS, PROMPTLY RETURN THE UNUSED
SOFTWARE TO YOUR PLACE OF PURCHASE FOR A REFUND OR, IF THE SOFTWARE
Do you accept all the terms of the preceding License Agreement? If you choose No, Setup will close. To install Java Runtime Environment, you must accept this agreement.
< Back
Yes
No

4. Read the License Agreement.
5. To continue with the installation, click Yes.
6. When the installation is complete, click OK.

The Java page opens:


ZebraNet View - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh
Address C:\Program Files\ZebraNet\TCPIP Utils\View Java Applet\ZebraNetViewPlugin
Links
Locate ZebraNet Devices on Network:
Search Method: Local Subnet
Address: 255.255.255.255
TimeTo Live: 5
Begin Search
Ready...
IP Address
Serial #
System Name
Open in New Window
Count: 0
Help
Zebra
ZebraNet View Web Configuration Utility
When opening ZebraNetViewPlugin.html, the Web Configuration Applet will load in the top frame of the browser, and this file appears in the lower frame.
To discovery Zebra network printers on your network:
1. Select search parameters:
o Local Subnet - broadcast to local subnet (255.255.255.255)
o Subnet Broadcast - Enter a subnet broadcast address (e.g. 10.10.10.255)
o Multicast - If your network router support Multicast, just set the Time to Live (Hopcount)
(note: Multicast is not supported on Netscape for all platforms)
2. Select "Begin Search" to locate printers
3. Links to Zebra Printers will be displayed in the list.
4. Select any printer from the list to connect and configure.
Applet started.
My Computer

7 You have these options:

- To work with this utility, see *ZebraNet View Java Applet on page 120*.
- To close the utility, click the **X**.

CHAPTER 4

Printing Configurations

This chapter provides information and instructions on configuring your printer.

Content

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BSD (Berkeley Software Distribution)-Style Print Queue

BSD is a version of the UNIX OS that distributes software that includes TCP/IP.

Configuring the Print Queue

For remote BSD-style LPD printing, add the 10/100 PS as a remote printer in the /etc/printcap database to each host printing to the 10/100 PS. You can add printcap options as needed. If you are unfamiliar with these options, consult the printer documentation.

Important • You must be logged in as `root`.

The entry looks similar to this:

```
local_print_queue_name|[printer_model_and_manufacturer]
:\
:lp=:mx#0:rm=ZebraNet_name:\
:rp=remote_print_queue_name:\
:sd=path_to_spool_directory:lf=just log_file_name
```

`local_print_queue_name` — This defines the name of the printcap entry. It is used by the LPR/LPD utilities to specify which printcap entry is being referenced. Additional printcap entries can be added as needed for different queue types. Each entry must have a unique local_print_queue_name and a different spool directory to work properly. When you are ready to print, use the local_print_queue_name that matches the data type of the file to be printed.

`ZebraNet_name` — This is the name (alias) of the ZebraNet 10/100 PS. This must be the same name as entered in the `/etc/` hosts file or your NIS or DNS system. An IP address may also be used here.

`remote_print_queue_name` — This entry determines the ZebraNet port where the print job will be printed and optionally specifies ASCII printing that must end for `LF1`.

`path_to_spool_directory` — This is the path to a directory where the print jobs will be spooled for this queue. You must create a unique spool directory for each printcap entry.

`log_file_name` — This is the path to a file where error information from the LPD will be logged.

Example • Your printcap entries might look similar to this:

```
Ascii_files|form.feed.Queue_on_Port_1:\
:lp=:mx#0:rm=pserver1:rp=MYQUEUELF1:\
:sd=/usr/spool/myqueuelf1:\
:lf=/usr/spool/myqueuelf1/queue.log
```

Important • Each printcap entry must have a different spool directory to work properly.

System V Queue Installation

Configuring Operating System V Queue for ZebraNet Printing

This section describes the configuration of the printing system on the UNIX operating system. For clarity and brevity, the following specific names are used to represent general devices or concepts.

`lj4` — The local queue name on the UNIX system to which you want 10/100 PS print jobs directed.

`ZEBRAPRINTER` — The host name or IP address of the remote system that is the 10/100 PS device. For example, to Telnet to the 10/100 PS and invoke the 10/100 PS configuration utility, you would enter:

```
Telnet ZEBRAPRINTER
```

A host name is not required for the 10/100 PS — the IP address can be used.

`yourqueuename` — This is the name of the queue on the ZebraNet and must end with `LF1`.

Prerequisites

Before you proceed, the following prerequisites must be met:

- The name ZEBRAPRINTER and the IP address assigned to the 10/100 PS are in the /etc/hosts file on the UNIX system.
- The LPD must be running on the UNIX system.

UNIX Configuration

To configure the UNIX machine so users can spool print jobs to the PCL print queue on the ZebraNet named ZEBRAPRINTER, complete these steps:

1. Log in to the UNIX machine as root.
2. Type:

```
lpsystem -t bsd ZEBRAPRINTER
```

3 Type:

```
lpadmin -p lj4 -s ZEBRAPRINTER!yourqueuename - I any
```

4 Type:

```
accept lj4
```

5 Type:

```
enable lj4
```

6 Try printing by typing the command:

```
lp -d lj4 [filename]
```

CHAPTER 5

Using Printing Protocols

In this chapter you are given steps to set up your 10/100 PS to support **I**nternet **P**rinting **P**rotocol (IPP). Also, an exercise is provided to experiment with **F**ile **T**ransfer **P**rotocol (FTP) support.

Content

IPP **72**
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IPP

Important • You must have IPP support on your system.

IPP is an application-level protocol used for distributed printing over the Internet. Using IPP from any standard IPP client, you can transfer jobs to a printer that is connected to your ZebraNet 10/100 PS device and the Internet.

Important • IPP support is not available on all 10/100 PS printers. To be certain you are running the latest version of firmware, visit our Web site:

www.zebra.com

To set up your 10/100 PS to support IPP, complete these steps:

1. Open a browser.
2. Enter the 10/100 PS IPP URL as follows:

```
http://xxx.xxx.xxx.xxx:631/ipp/port1

xxx.xxx.xxx.xxx = the IP address of the 10/100 PS
device

:631 = a fixed value

/ipp = a fixed string designating IPP

/port1 = a fixed value
```

Example • Your address might look like this:

```
http:198.60.248.120:631/ipp/port1
```

Note • Because IPP does not have an official standard, usage depends entirely on the quality of the IPP client and server.

FTP

Embedded within the 10/100 PS is an FTP server application that processes file transfers from a host computer to the printer.

If the printer is on a network, label formats can be generated and data can be transferred without setting up a print queue.

To send information to the printer in a Windows environment, try this alternative exercise:

1. In a text editor, generate the following ZPL II code:

   ```
   ^XA
   ^FO100,100
   ^CF0,55^FDZebra Technologies^FS
   ^XZ
   ```

2. Save the file and name it `test.txt`.
3. Open the MS-DOS Command Prompt and type:

   ```
   ftp <IP of 10/100 PS>
   ```

Example • If the IP address of your 10/100 PS device is `12.3.4.123`, you would type:

```
ftp 12.3.4.123
```

This opens a session with the FTP server.

Note • The default user name is `blank`.

4. Type your user name and press Enter.
5. Type:

   ```
   put test.txt
   ```

   This transfers `test.txt` to the printer, and the printer generates a label.

6 To terminate the FTP session, type:

```
quit
```

APPENDIX A

ZebraLink

The appendix provides you with detailed information that allows you to use the enhanced functionality of your ZebraLink-enabled printer with the 10⁄100 PS.

WebView

WebView gives the System Administrator or user who needs complete, easy, one-step control over the printing environment exactly what is needed. It provides real-time configuration, control, and monitoring capabilities with the convenient graphic interface of a Web browser.

The Web pages returned by Zebra printers are not static. They contain real-time information about the printer's present state of operation, including on-line status, error conditions, and all printing parameters.

Home Page

Note • To access the printer's Web page, you need the IP address. For instructions on getting the IP address, see *Assigning an IP Address on page 16*.

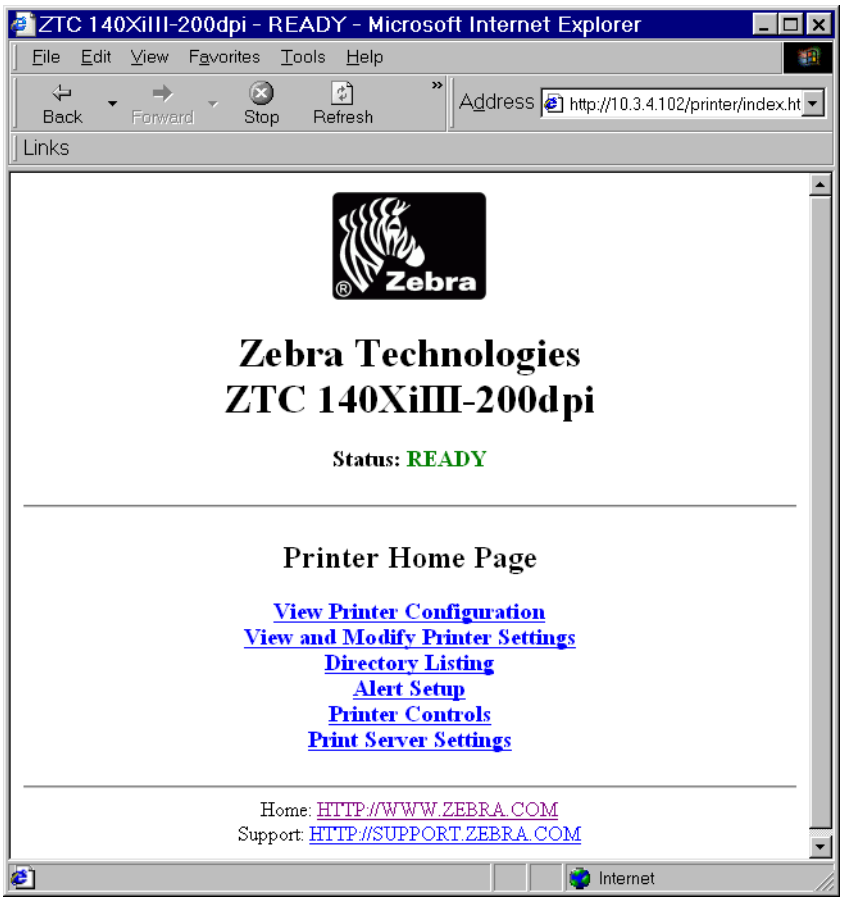
The Home Page is the first Web page that opens. It is a page with a menu of hyperlinks. Each hyperlink allows you to make modifications to the printer, 10⁄100 PS, and network settings; the other changeable settings through the Home Page include:

- Network Status, Error, and Warning reports
- ZebraNet 10⁄100 PS configuration
- Printer settings
- Directories of objects stored in Flash memory and RAM devices
- Objects, stored fonts, images, programs, and ZPL II formats
- Zebra Technologies support and home pages

To open the WebView of your printer, complete these steps:

1. Open a Web browser.
2. In the *Address* text-box, type your printer's IP address, and press Enter.

The *Printer Home Page* opens:



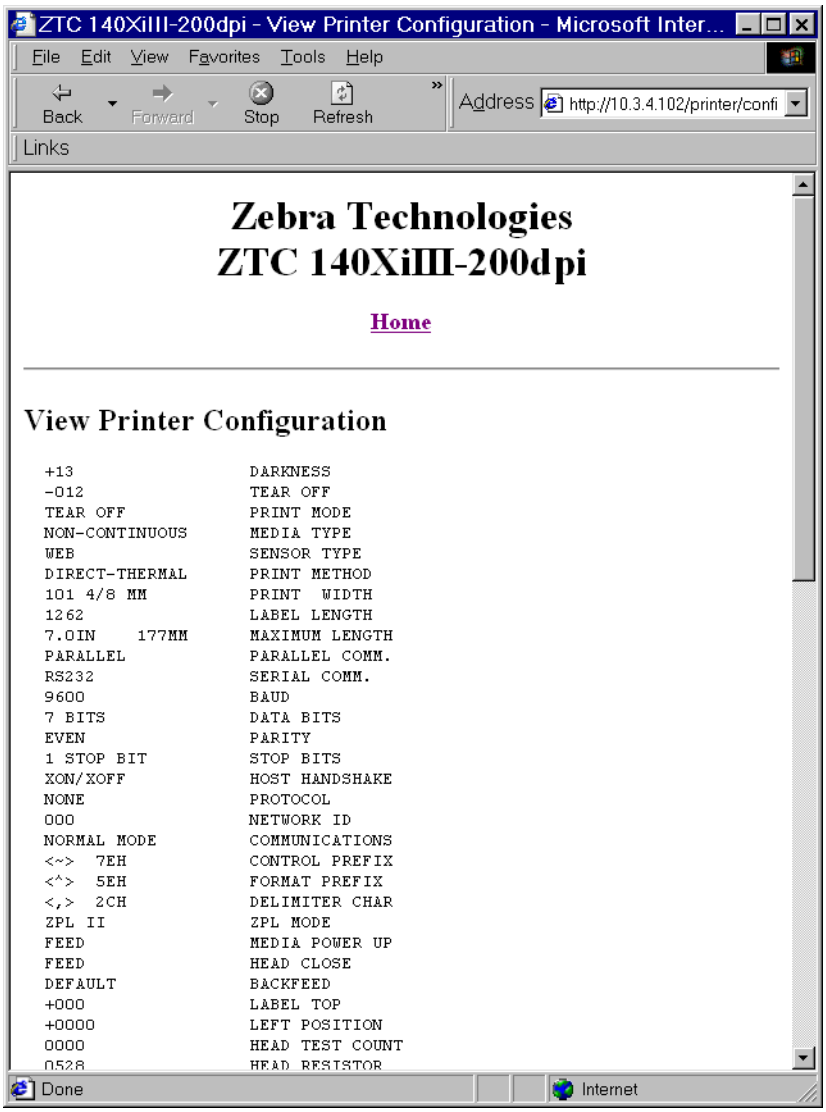
View Printer Configuration

The View Printer Configuration menu option provides accurate, up-to-the-minute information on the printer's current state. An administrator can conveniently find any information on the Virtual Configuration Label and also check on the status of printer ports.

To see the View Printer Configuration menu option, complete these steps:

1 From the *Printer Home Page*, click View Printer Configuration.

The WebView displays the configuration settings:



2 To update the printer information from this view:

- For Netscape, select Reload and the printer sends current information to the Web browser.
- For IE, click Refresh and the printer sends current information to the Web browser.

3 When you are finished reviewing:

- To return to the Home page, click the Home link.
- To print the label, scroll to the bottom of this page and click Print Label.

View and Modify Printer Settings

This section provides you with steps for accessing and modifying printer settings with a ZebraLink-enabled printer. It also provides illustrations of the various pages you can access.

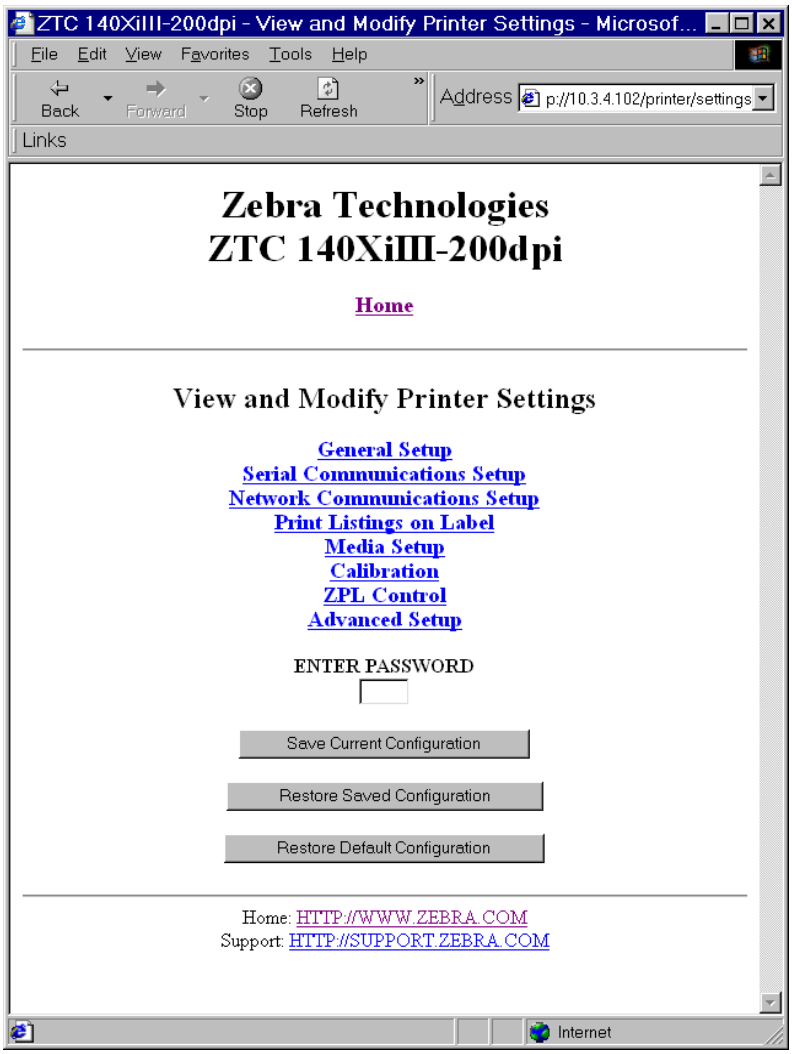
Important • To apply changes made in this section, you need to use the default user ID and password:

User ID: `admin`
Password: `1234`

To view the View and Modify Printer Settings, complete these steps:

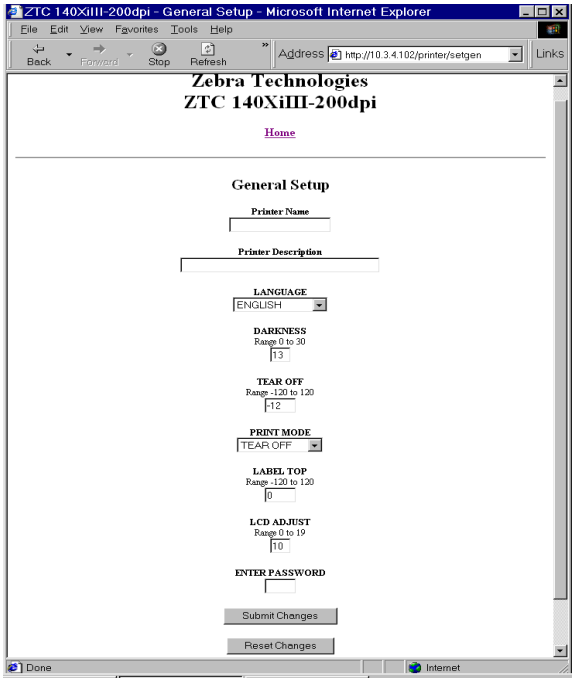
1 From the *Printer Home Page*, click View and Modify Printer Settings.

The *View and Modify Printer Settings* page opens:

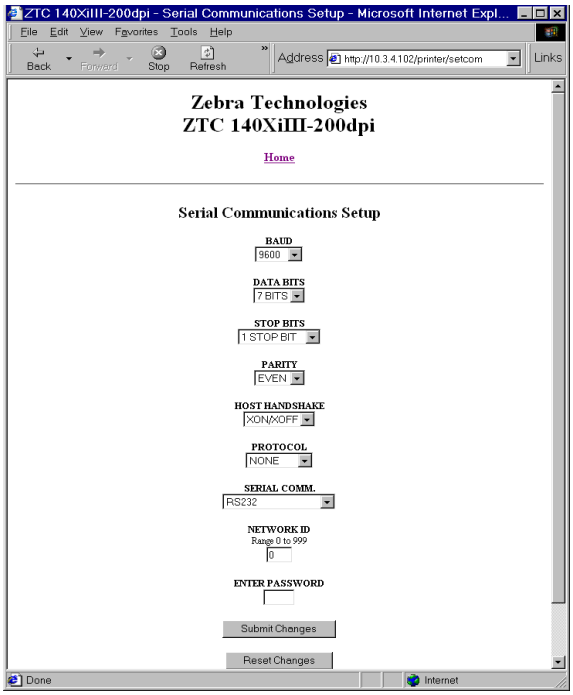


2 In the View and Modify Printer Settings page, you have a menu to choose from. The section that follows identifies what each menu option page looks like:

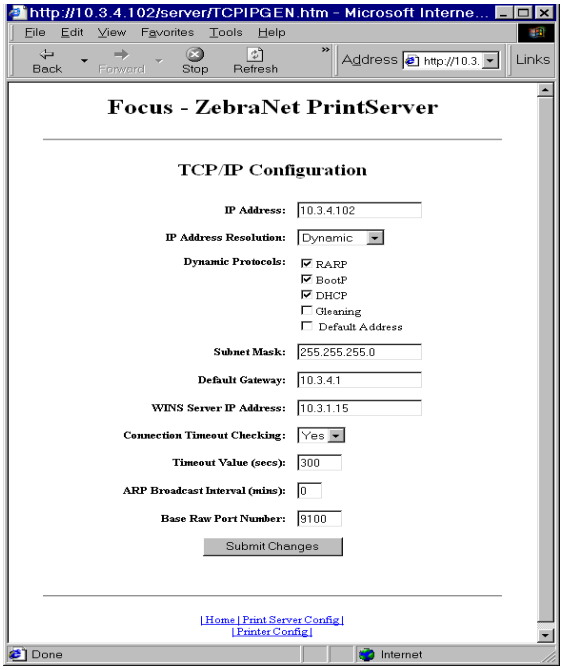
[General Setup]



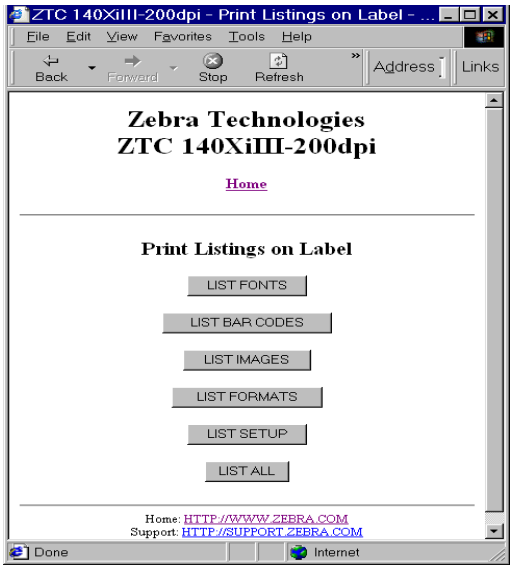
[Serial Communications Setup]



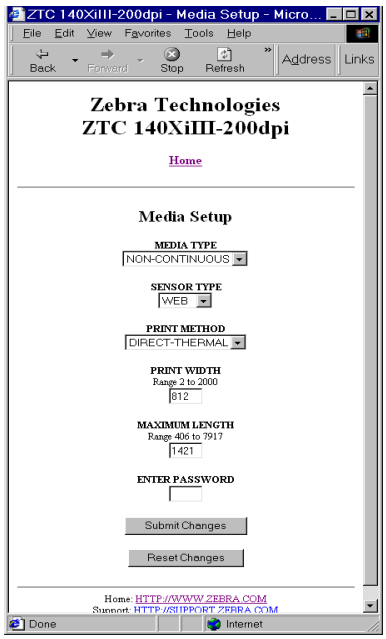
Network Communications Setup


http://10.3.4.102/server/TCPIPGEN.htm - Microsoft Interne...
File Edit View Favorites Tools Help
Back Forward Stop Refresh Address http://10.3. Links
Focus - ZebraNet PrintServer
TCP/IP Configuration
IP Address: 10.3.4.102
IP Address Resolution: Dynamic
Dynamic Protocols: RARP BootP DHCP Gleaning Default Address
Subnet Mask: 255.255.255.0
Default Gateway: 10.3.4.1
WINS Server IP Address: 10.3.1.15
Connection Timeout Checking: Yes
Timeout Value (secs): 300
ARP Broadcast Interval (mins): 0
Base Raw Port Number: 9100
Submit Changes
[Home | Print Server Config | Printer Config]
Done
Internet

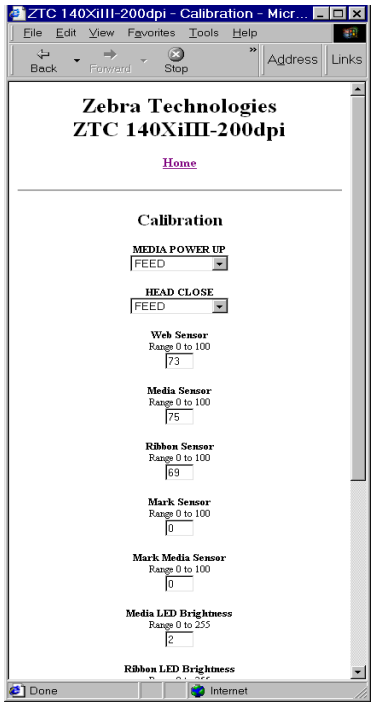
Print Listings on Label



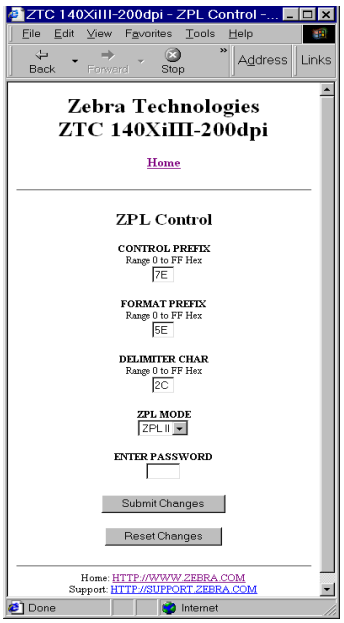
Media Setup



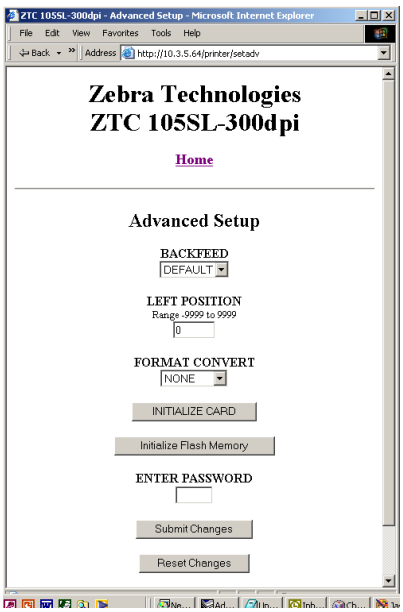
Calibration



ZPL Control



Advanced Setup



Directory Listing

The directory page provides a listing of all file system devices (B:, E:, R:, Z:). The size, name, and location of each stored object appears.

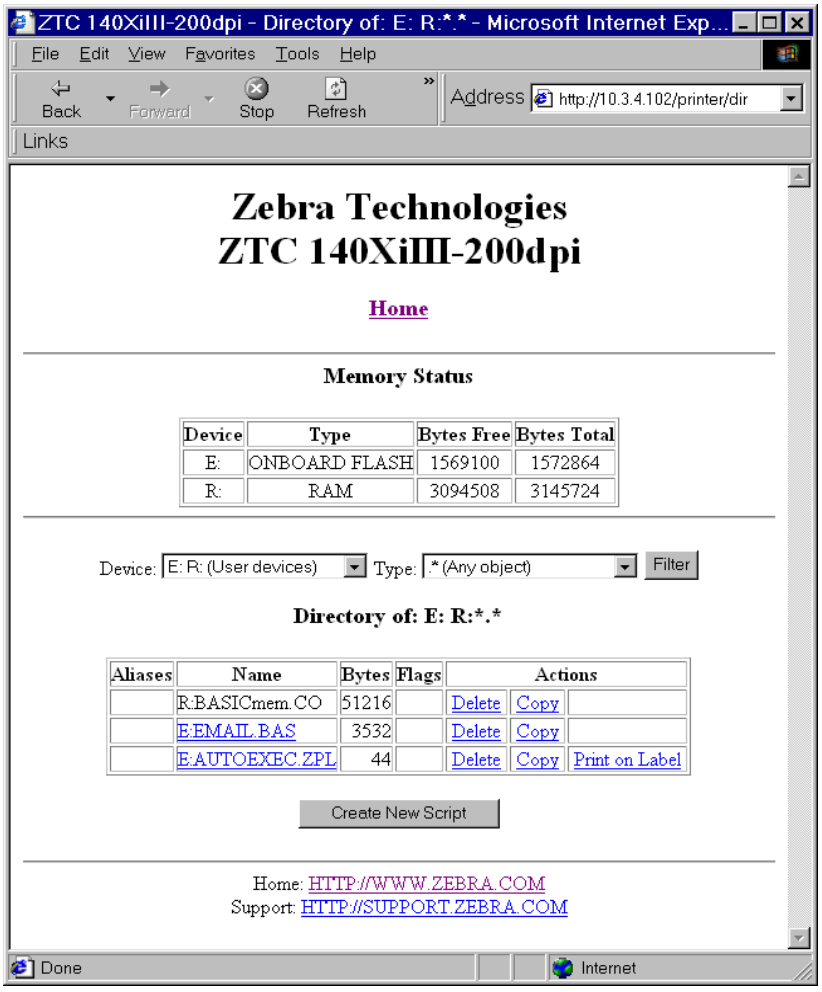
Buttons are available to perform file management operations on the objects. The file management operations include:

- Delete object — Not available for objects in read-only memory (Z:).
- Copy object to a new name and/or device — Not available for objects that have the “protected” attribute set.
- Run a ZBI program — Available only if the object is a stored ZBI program. For details, see *Zebra BASIC Interpreter (ZBI) on page 91*.

To view the Directory Listing, complete these steps:

1 From the *Printer Home Page*, click Directory Listing.

This page opens:



2 There are several links to select in this view.

3 To create a script, click Create New Script.

Alert Setup

To configure the printer's interaction with ZebraNet Alert to be completely functional, SNMP settings must be established in these areas:

- The printer, via the WebView interface.
- The Alert Printer Management Utility for logging SNMP traps.

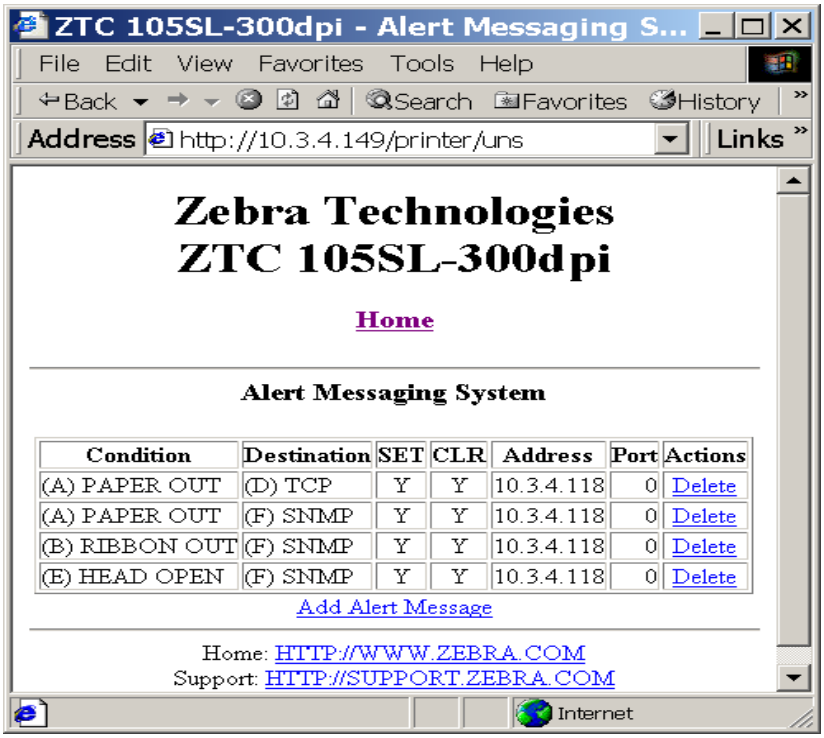
The ZebraLink messaging system provides for more than SNMP notification. Alert can be routed to various destinations:

- TCP
- UDP
- email
- serial port
- parallel port destinations

To view Alert Setup, complete these steps:

1 From the *Printer Home Page*, click Alert Setup.

The *Alert Messaging System* page opens:


ZTC 105SL-300dpi - Alert Messaging S...
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://10.3.4.149/printer/uns
Links
Zebra Technologies
ZTC 105SL-300dpi
Home
Alert Messaging System
Condition | Destination | SET | CLR | Address | Port | Actions
(A) PAPER OUT | (D) TCP | Y | Y | 10.3.4.118 | 0 | Delete
(A) PAPER OUT | (F) SNMP | Y | Y | 10.3.4.118 | 0 | Delete
(B) RIBBON OUT | (F) SNMP | Y | Y | 10.3.4.118 | 0 | Delete
(E) HEAD OPEN | (F) SNMP | Y | Y | 10.3.4.118 | 0 | Delete
Add Alert Message
Home: HTTP://WWW.ZEBRA.COM
Support: HTTP://SUPPORT.ZEBRA.COM
Internet

2 To add an alert, click Add Alert Message.

3 Select accordingly.

Establishing Email Alert Messaging

ZebraNet Alert supports email notification of printer errors sent directly to any valid email address. You can have multiple email addresses set up for routing different error messages, or split notifications between email and other network management tools.

To begin receiving email notification of errors, complete these steps:

1 From the browser, in the address text-box type in the printer's address.

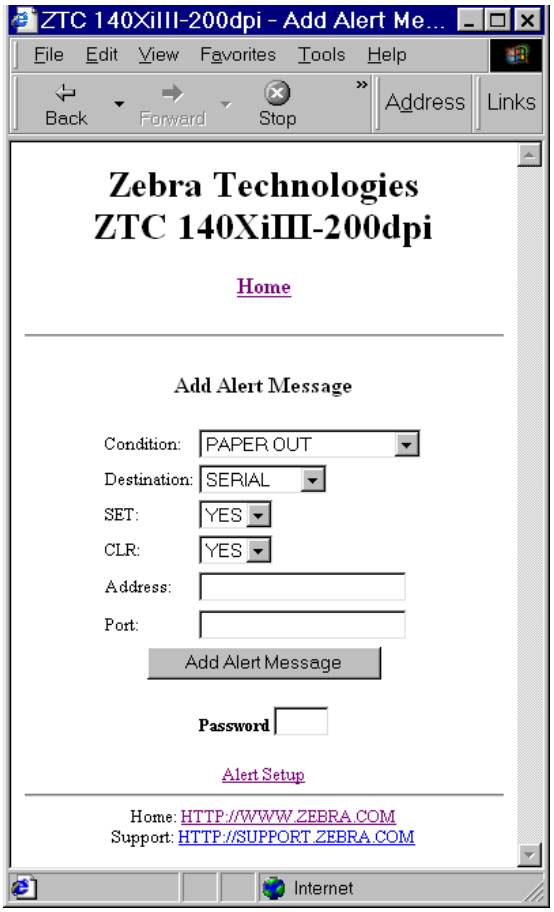
The printer's home page opens.

2 From the *Printer Home Page*, click Alert Setup.

The Alert Setup page shows a list of message notifications and their respective destinations.

3 From the *Alert Setup* page, email notification can be set up. Click Add Alert Message.

The *Add Alert Message* page opens:



Important • The printer accepts only the last configuration made.

4 Specify the condition to send over email, such as `HEAD ELEMENT BAD` or `PAPER OUT`.

5 Enter a valid email address for the messages to be sent.

Example • `admin@yourcompany.net` (The Port field can be ignored for email setup.)

Warning • You must type in a password. If you forget to enter the *default* password, the alerts you just set are deleted.

6 Click Add Alert Message. Here you can continue to add more settings or, if finished, save the current settings.

7 From the Printer Home Page, select PrintServer Settings>Network Communications Setup.

8 Click SMTP Email Alerts.

9 Specify your SMTP server address.

When these steps are done, you can begin receiving email notification messages.

Printer Controls

This page offers control over basic printer functions.

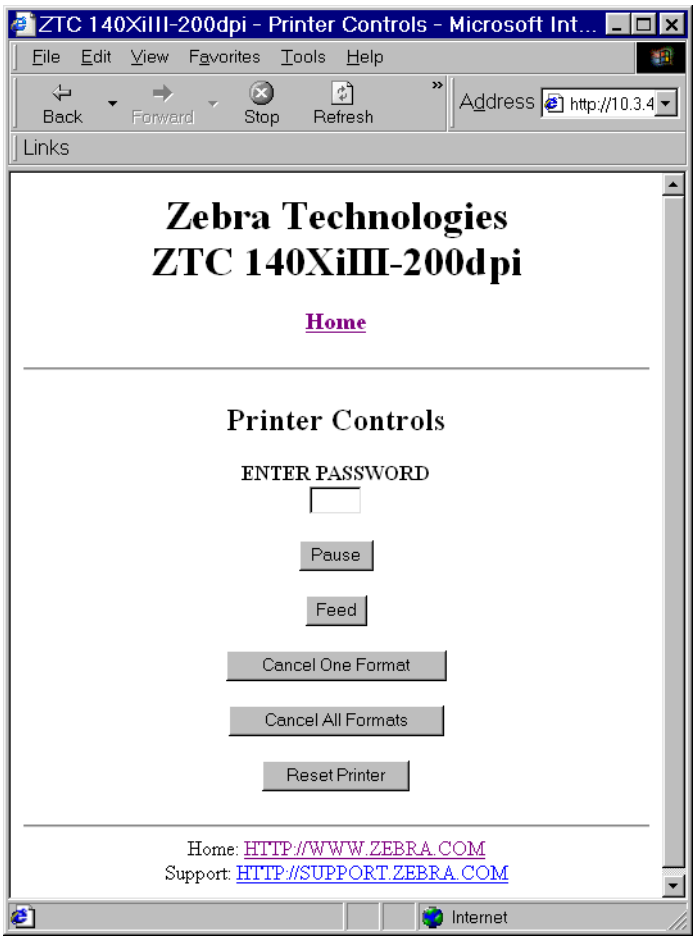
Other functions are also accessible from this page. These include:

- `Feed` — causes printer to feed one label.
- `Cancel One Format` — cancels the currently printing format.
- `Cancel All Formats` — cancels all formats.
- `Reset Printer` — causes printer to perform its standard reset without cycling power.

To view Printer Controls, complete these steps:

1 From the *Printer Home Page*, click Printer Controls.

This *Printer Controls* page opens:



Important • In this view, you must have administrative rights to make changes to the printer controls.

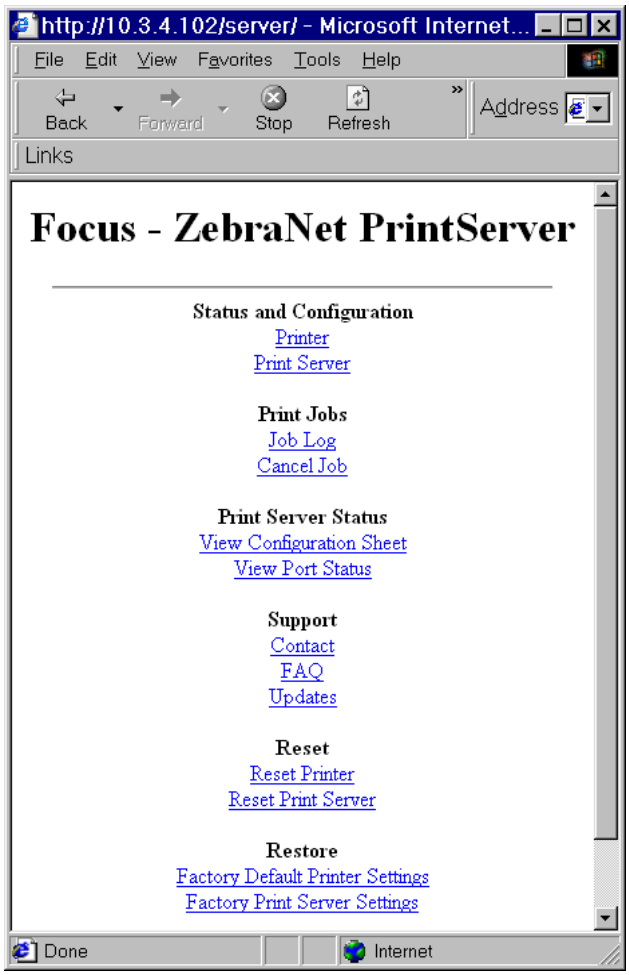
Print Server Settings

This section provides you with instructions for viewing the current printer settings.

To view the print server menu, complete these steps:

- From the *Printer Home Page*, click Print Server Settings.

The *PrintServer* page opens:



Zebra BASIC Interpreter (ZBI)

ZBI allows you to maximize printing options through custom programs written for your specific needs. ZBI programs can be viewed, modified, and run from the Directory Listing Page, see *Directory Listing on page 84*.

APPENDIX B

10/100 Print Server

This appendix provides you with details on the 10/100 PS features that were not covered in the chapter *Getting Started on page 13*.

10/100 PS Features

This section covers features available for the 10/100 PS *only*, not the printer's features. Some of the features you access in this section prompt you to enter the default user ID and password, as follows:

- **User ID**: `admin`
- **Password**: `1234`

The options on the Print Server page vary. ZPL and EPL printers print server settings vary slightly.

Note • The difference between **ZPL** and **EPL** is this:

- **ZPL** — If you have a ZPL printer with x.10 or later firmware, you are prompted to the *Printer Home* page. From there, you select Print Server Settings.
- If you have a ZPL printer with firmware earlier than x.10, you are initially taken to the Print Server home page
- **EPL** — If you have an EPL printer, you are immediately prompted to the *Print Server* page.

Status and Configuration

The steps that follow are based on the navigation of a ZPL printer using firmware X.10 or higher.

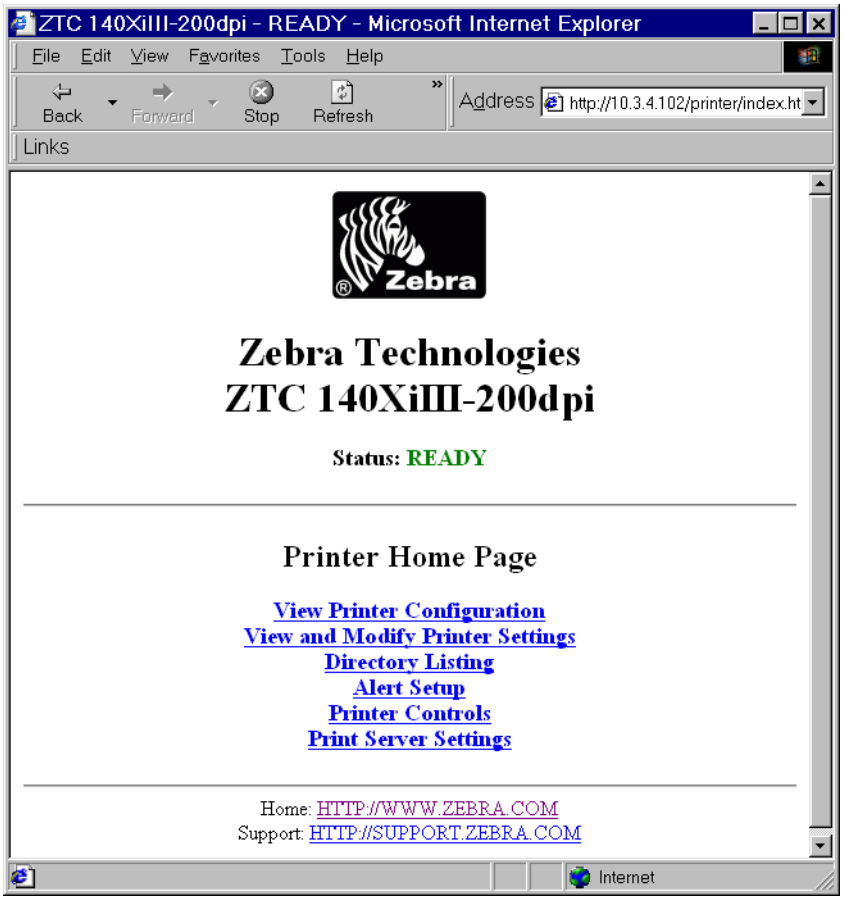
Important • You can upgrade your firmware by visiting our Web site:

http://www.zebra.com

To access the print server settings, complete these steps:

1. Open a Web browser.
2. In the *Address* text-box, type your printer's IP address, and press Enter.

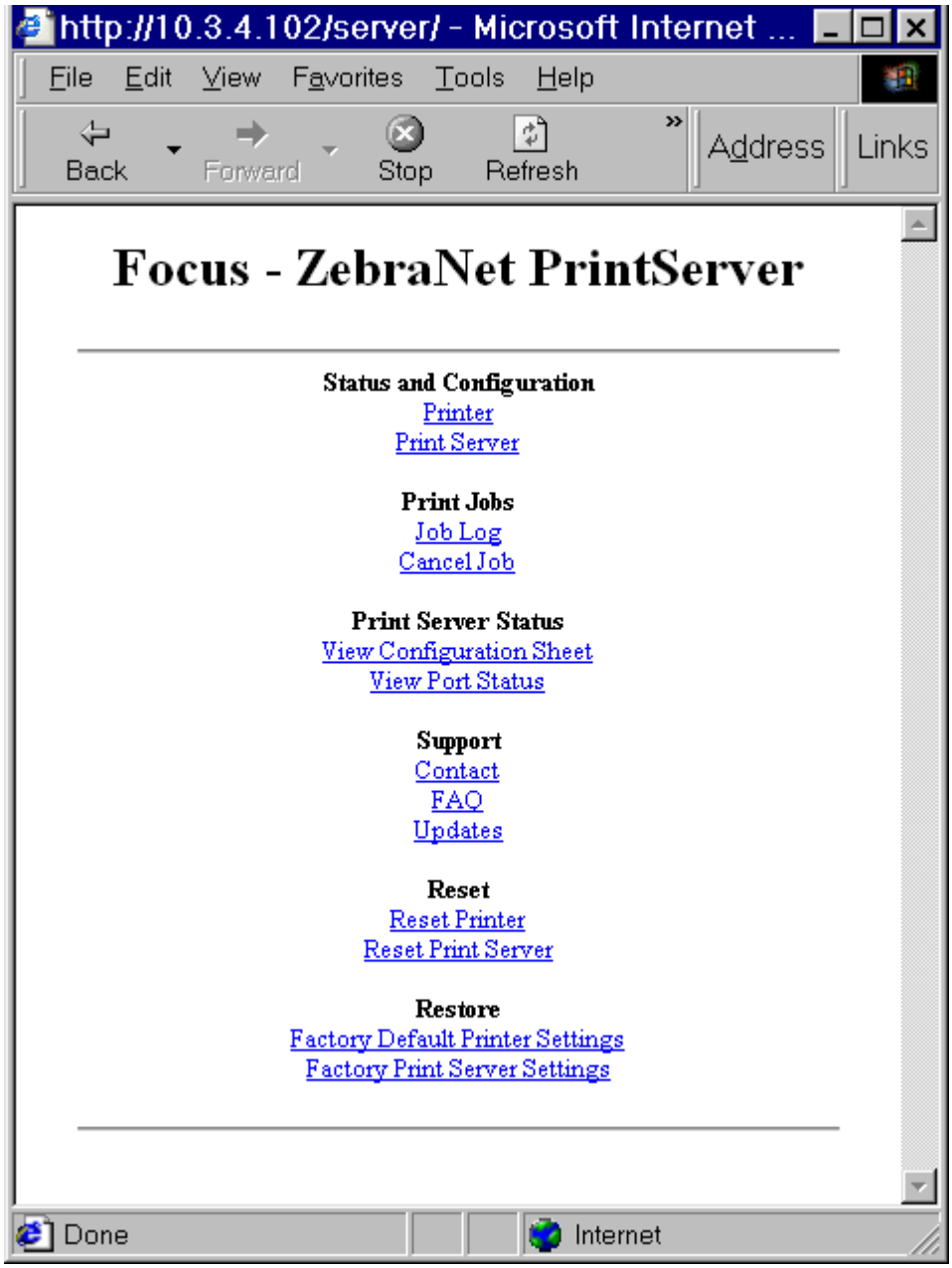
The *Printer Home Page* opens:



3 From the *Printer Home Page*, click Print Server Settings.

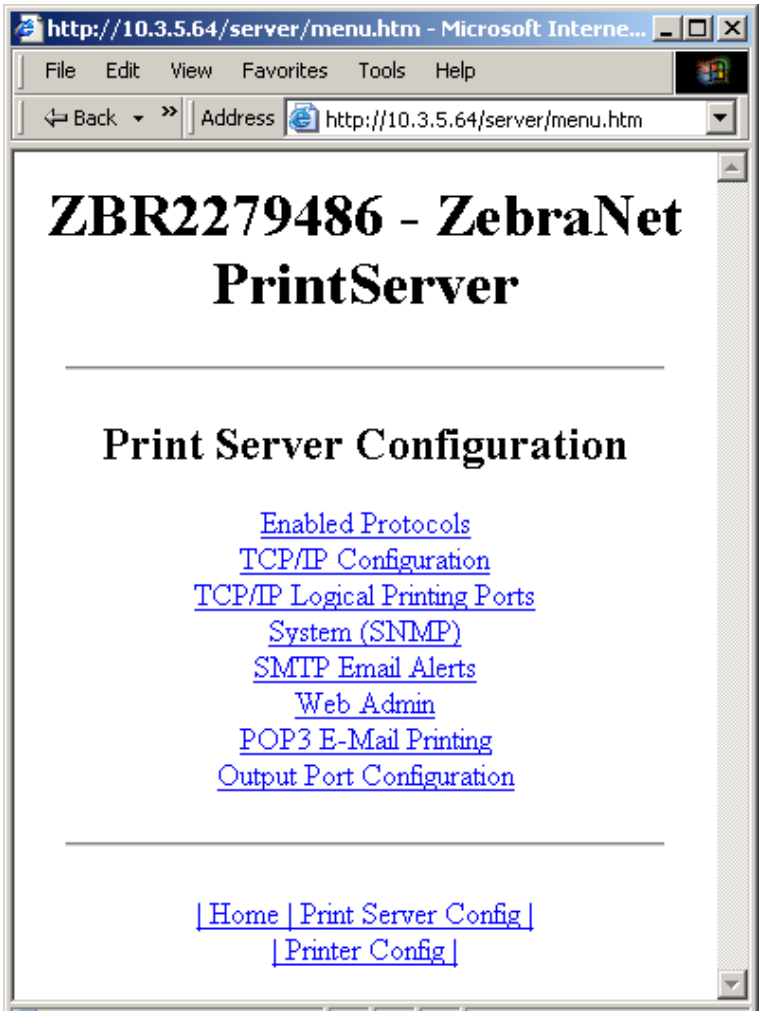
Important • The illustration of the Printer Server Settings page is based on a ZPL printer. If you have an EPL printer, the menu options on the Print Server page are slightly different.

The *PrintServer* page opens:



4 From the *PrintServer* page, click Print Server.

The *Print Server Configuration* page opens:

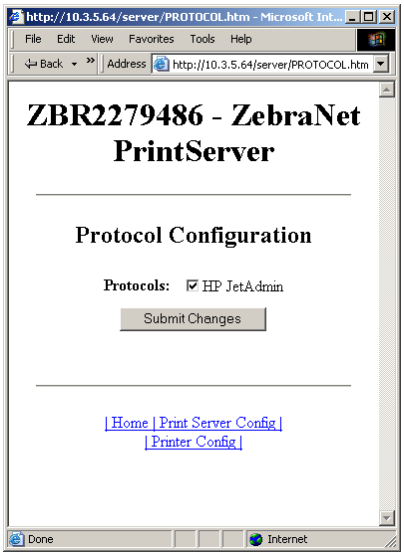


5 In the *Print Server Configuration* page, you have a menu to choose from. The table that follows identifies what each menu option page looks like:

Enabled Protocols

Modifies the protocols to be used. NetWare, HP JetAdmin, or both.

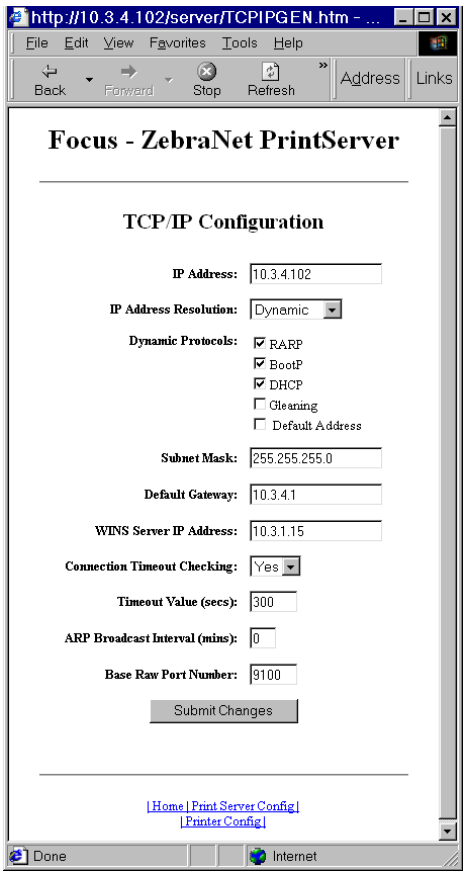
Enabling HP JetAdmin Support allows status from the Zebra device to display in Hewlett-Packard's HP JetAdmin utility.



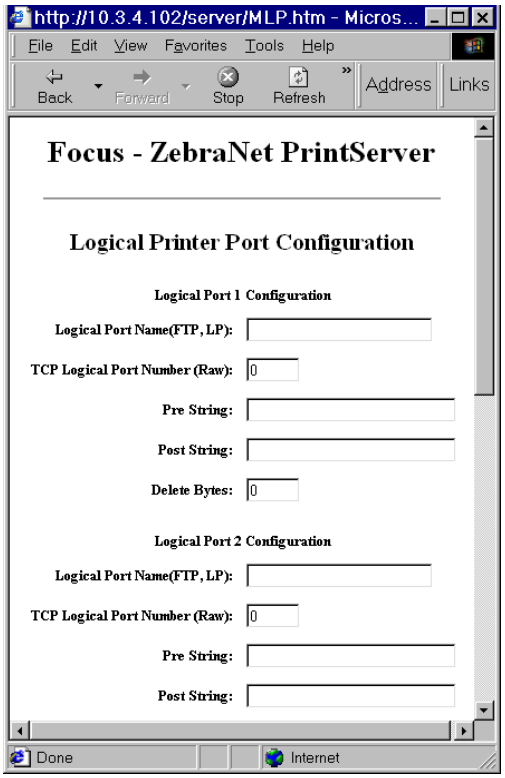
TCP/IP Configuration

You can change the TCP/IP Configuration of the 10/100 PS.

For details, see Help.


http://10.3.4.102/server/TCPIPGEN.htm - ...
File Edit View Favorites Tools Help
Back Forward Stop Refresh Address Links
Focus - ZebraNet PrintServer
TCP/IP Configuration
IP Address: 10.3.4.102
IP Address Resolution: Dynamic
Dynamic Protocols: RARP BootP DHCP Gleaning Default Address
Subnet Mask: 255.255.255.0
Default Gateway: 10.3.4.1
WINS Server IP Address: 10.3.1.15
Connection Timeout Checking: Yes
Timeout Value (secs): 300
ARP Broadcast Interval (mins): 0
Base Raw Port Number: 9100
Submit Changes
[Home] Print Server Config]
[Printer Config]
Done
Internet

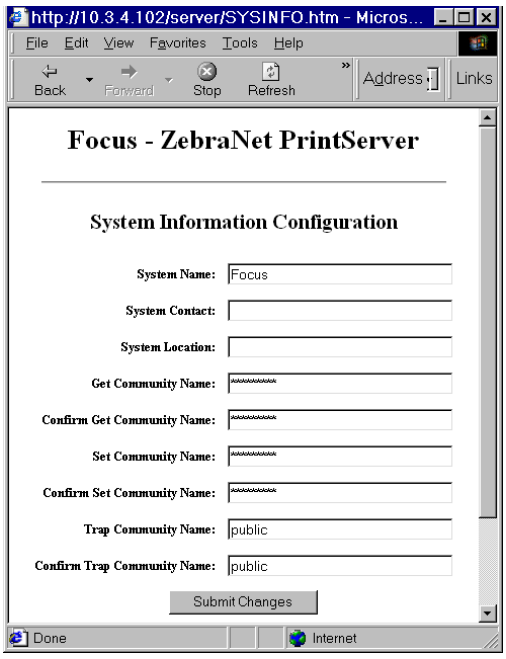
TCP/IP Logical Printing Ports



Logical printers allow you to set up multiple pre- and post-processing configurations for each output port. Each logical port configuration can do the following:

- Add user-configured strings before and after the print data.
- Remove unwanted characters from the beginning of the print data.
- Four logical printer configurations are supported for each output port on the printer. The configurations can be assigned to any port, and all of these configurations can be assigned to a single output port.

System (SNMP)

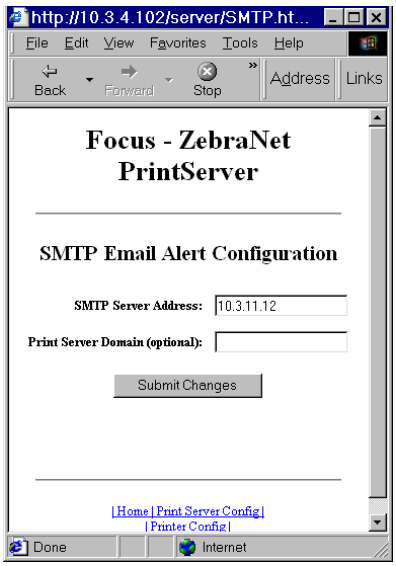


This feature gives you the ability to manage multiple devices on a network, be it printers, computers, or other network-attached devices.

On this page you can define the SNMP system name, system location (10⁄100 PS description), and other SNMP settings for your 10⁄100 PS.

SMTP Email Alert Configuration

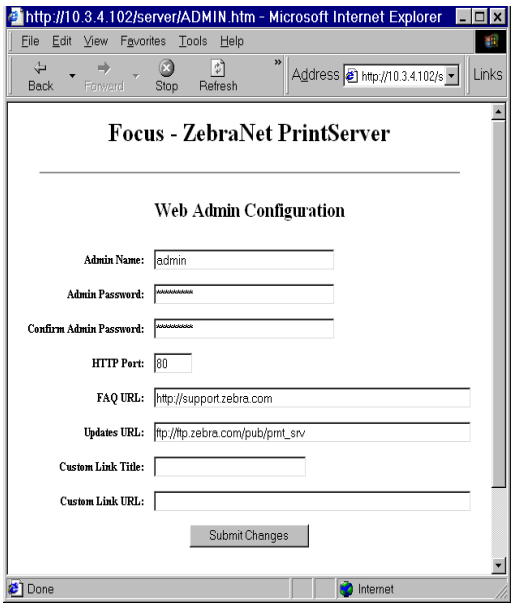
This feature allows you to enter data regarding System Information on the network that is being used. Typically, a Network Administrator would use this.



Web Admin

This page allows you to configure the Admin name and password. Links to upgrades and support information can also be altered.

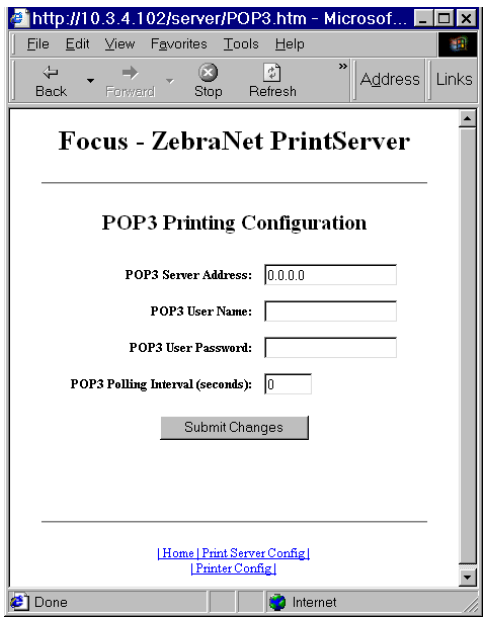
Note • The printer and print server password can be changed on ZPL printers with firmware x.10 or higher, in the same way the printer password is changed with bi-directional communications enabled.



POP3 Email Printing

This feature helps you set up the print server to receive email messages containing formats that can be printed. The POP3 settings must be set to retrieve emails from the email server.

Important • Setting the POP3 polling interval (seconds) below 30 can cause communication problems with the POP3 server.

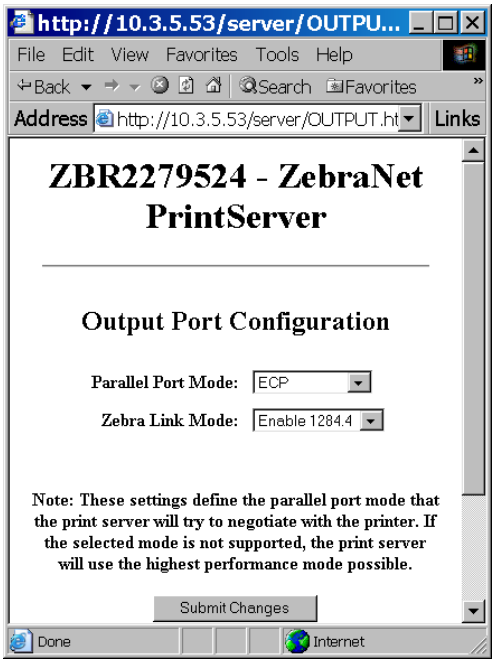


Output Port Configuration

This feature allows you to change the Parallel Port Mode setting.

Selections for Parallel Port Mode include Compatibility, Nibble, Byte, and ECP.

- Compatibility is a unidirectional forward mode used only for sending data to the printer.
- Nibble, Byte, and ECP modes are all bi-directional modes. Data can be sent to and from the printer.
  - Nibble mode sends only 4 bits of data at a time in the reverse direction from the printer to the print server. Forward direction mode is compatibility mode.
  - Byte mode sends a full byte of data at a time in the reverse direction from the printer to the print server. Forward direction mode is compatibility mode.
  - ECP mode is a complete forward and reverse mode that more efficiently transfers data.


http://10.3.5.53/server/OUTPU...
File Edit View Favorites Tools Help
Back Search Favorites
Address http://10.3.5.53/server/OUTPUT.ht
Links
ZBR2279524 - ZebraNet PrintServer
Output Port Configuration
Parallel Port Mode: ECP
Zebra Link Mode: Enable 1284.4
Note: These settings define the parallel port mode that the print server will try to negotiate with the printer. If the selected mode is not supported, the print server will use the highest performance mode possible.
Submit Changes
Done
Internet

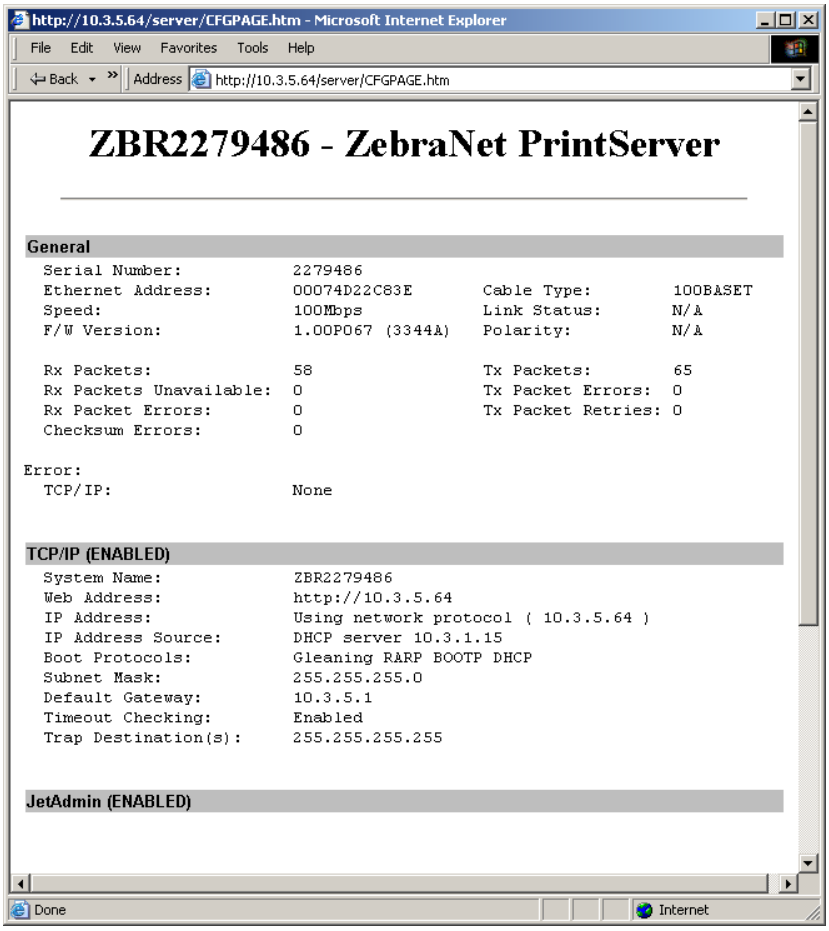
Print Server Status

From the *Print Server* page, in the **Print Server Status** section you can access 10/100 PS's configuration sheet and port status.

To open 10/100 PS's configuration sheet, complete this step:

1 From the *PrintServer* page, click View Configuration Sheet.

This page opens:

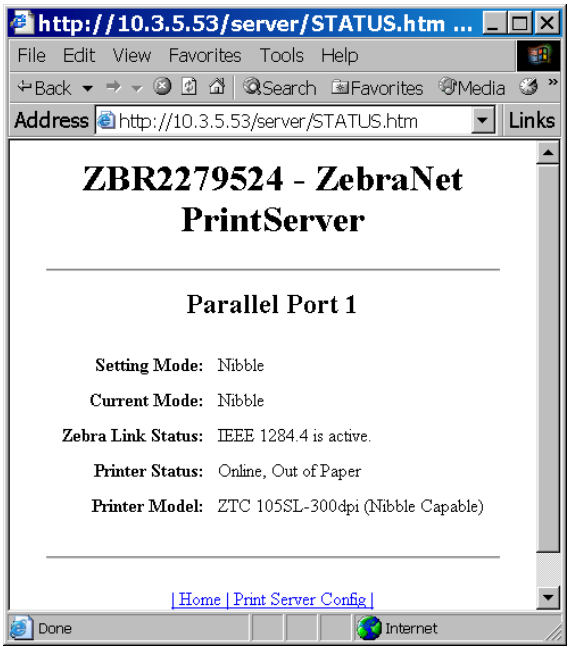


To view the port status, complete this step:

Important • The default user ID and password is required to access this page.

1 From the *Print Server* page, click View Port Status.

The port status page opens:



Reset

From the *Print Server* page, in the **Reset** section you can reset 10/100 PS's configuration settings to what they were before you made the most recent changes.

To reset the 10/100 PS, complete these steps:

1 From the *Print Server* page, click Reset Print Server.

The *Reset Device* page opens:

2 To reset 10/100 PS, click Yes.

Restore

From the *Print Server* page, in the **Restore** section you can restore 10/100 PS's to the default factory settings:

To restore 10/100 PS to the default factory settings, complete these steps:

1 From the *Print Server* page, click Factory Print Server Settings.

The *Restore To Factory Defaults* page opens:

2 Make the selections you want, and click Submit Changes.

APPENDIX C

ZebraNet Utilities

The appendix provides you with details on ZebraNet Utilities, the software suite of printer administration tools that complements and enhances both ZebraLink and the ZebraNet family of connectivity products.

Contents

ZebraNet View 108
ZebraNet Alert 111
Sending Email to Your Zebra Printer 114
ZebraNet Connect 119
ZebraNet View Java Applet 120

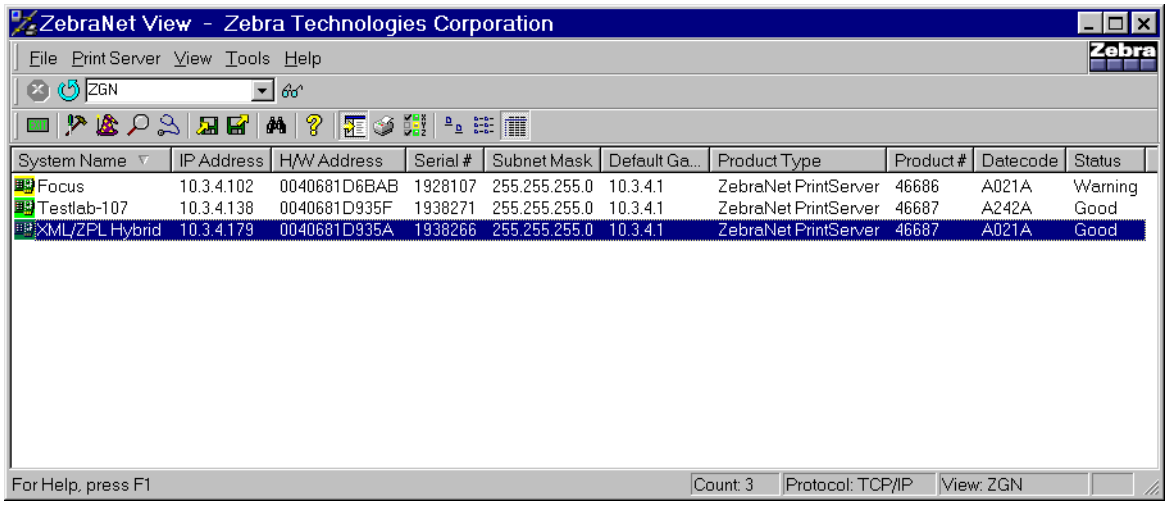
ZebraNet View

ZebraNet View allows you to locate printers automatically. It can search on parameters such as IP address, subnet, printer model, printer status, and many other user-defined characteristics. It also offers powerful device management capabilities.

To open ZebraNet View Utilities, complete these steps:

1 From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet View.

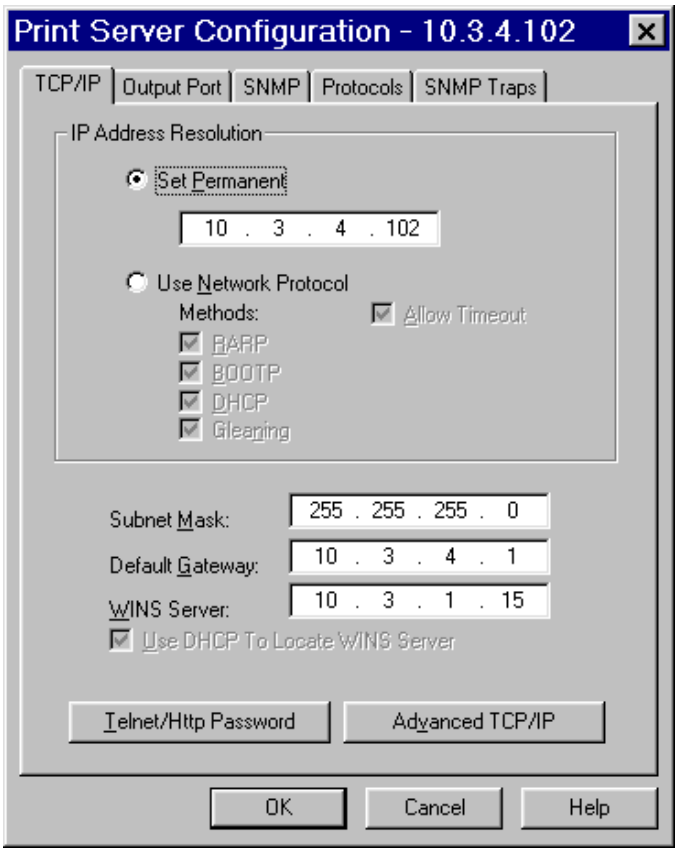
The *ZebraNet View* dialog opens:


ZebraNet View - Zebra Technologies Corporation
File Print Server View Tools Help
Zebra
ZGN
System Name | IP Address | H/W Address | Serial # | Subnet Mask | Default Ga... | Product Type | Product # | Datecode | Status
Focus 10.3.4.102 0040681D6BAB 1928107 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46686 A021A Warning
Testlab-107 10.3.4.138 0040681D935F 1938271 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46687 A242A Good
XML/ZPL Hybrid 10.3.4.179 0040681D935A 1938266 255.255.255.0 10.3.4.1 ZebraNet PrintServer 46687 A021A Good
For Help, press F1
Count: 3
Protocol: TCP/IP
View: ZGN

2 Select your printer.

3 From the menu bar, select PrintServer>Configuration.

The *Print Server Configuration* dialog opens:

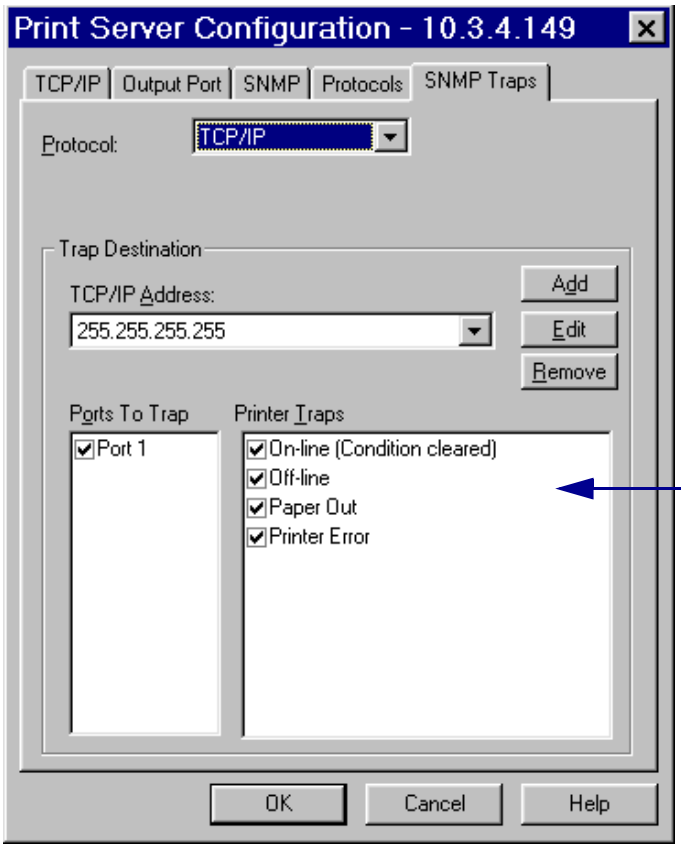


There are multiple tabs that you can access to make changes to current settings.

To set alerts in ZebraNet View, complete these steps:

4 From the *Print Server Configuration* dialog, click the *SNMP Traps* tab.

The *SNMP Traps* tab shows the alerts you can set.



5 To monitor the set alerts (printer traps), see *ZebraNet Alert on page 111*.

ZebraNet Alert

ZebraNet Alert gives you the ability to manage your Zebra printers by immediately notifying System Administrators of printer error or warning conditions. Using Web-based configuration tools, selected errors or warning conditions can be routed to a variety of services such as email messages, wireless pagers, or the ZebraNet Alert.

The following tables show the conditions that can trigger alerts:

10/100 PS Alerts

- On-line (condition clear)
- Off-line
- Paper out
- Printer error

ZebraLink Alerts

- Media out
- Ribbon out
- Printhead over-temp warning
- Printhead under-temp warning
- Head open
- Power supply over-temp
- Ribbon warning (in direct-thermal mode)
- Rewind full
- Cut error
- Printer paused
- PQ job completed

- Label taken
- Head element out
- ZBI (Zebra BASIC Interpreter) runtime error
- ZBI (Zebra BASIC Interpreter) forced error
- Power on

ZebraNet Alert Destinations

Unsolicited Alert messages can be directed to the following destinations:

- Email (10/100 PS-specific)
- TCP (10/100 PS-specific)
- UDP (10/100 PS-specific)
- SNMP (10/100 PS-specific)

ZebraNet Alert Using SNMP

You can send notifications over SNMP only, for use with ZebraNet Alert or a similar network management utility.

To configure the 10/100 PS to send alerts across a TCP/IP Network to ZebraNet Alert, complete these steps:

Important • If you did not install ZebraNet Alert during the ZebraNet Utilities installation, see *ZebraNet Utilities on page 56*.

1. From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet View.
2. Select the printer you want.
   - If a DHCP server is present, the 10/100 PS will already have an IP address.
   - If no DHCP server is present, you might need to assign the printer an IP address.
3. To assign your printer an IP address, from the menu bar, select Print Server>Configuration.

4 For PrintServer SNMP Traps, select the *SNMP Traps* tab.

5 Enter the trap destination and options.

This tells the 10⁄100 PS what TCP/IP address to send the alerts to, and under what circumstances to send error and log reports. Entering 255.255.255.255 broadcasts the message to every host on the network with an SNMP program running.

6 For ZebraNet Alert to get and display the messages, you need to open ZebraNet Alert. To do this, follow these steps:

- From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet Alert.

Important • The SNMP trap settings must be established to communicate with 10⁄100 PS if messages are sent to the ZebraNet Alert.

- In the *ZebraNet Alert* dialog, from menu bar, select View>Filter Settings.
- From the *View Filter - Devices* tab, choose your settings accordingly.

Note • If you select **No device filtering**, messages from every printer are caught; **Device Address** allows you to specify which IP address data will come from.

- The **View Filter - Events** tab allows you to select individual events you want the program to be aware of.

Important • Now 10⁄100 PS's SNMP Alert messages can be set up in WebView. From the printer's home page, activate the link to Alert Setup. You can add messages that are sent to the ZebraNet Alert for Windows by choosing SNMP as a destination.

Sending Email to Your Zebra Printer

To easily transfer instructions and data to your printer from a remote location, 10⁄100 PS allows you to send email to the printer. This is set up under the link POP3 Email Printing. You need to provide the address of the network POP3 server, a user name, and a password.

With this option, you can create a text-based email containing ZPL II code and transfer it to the printer.

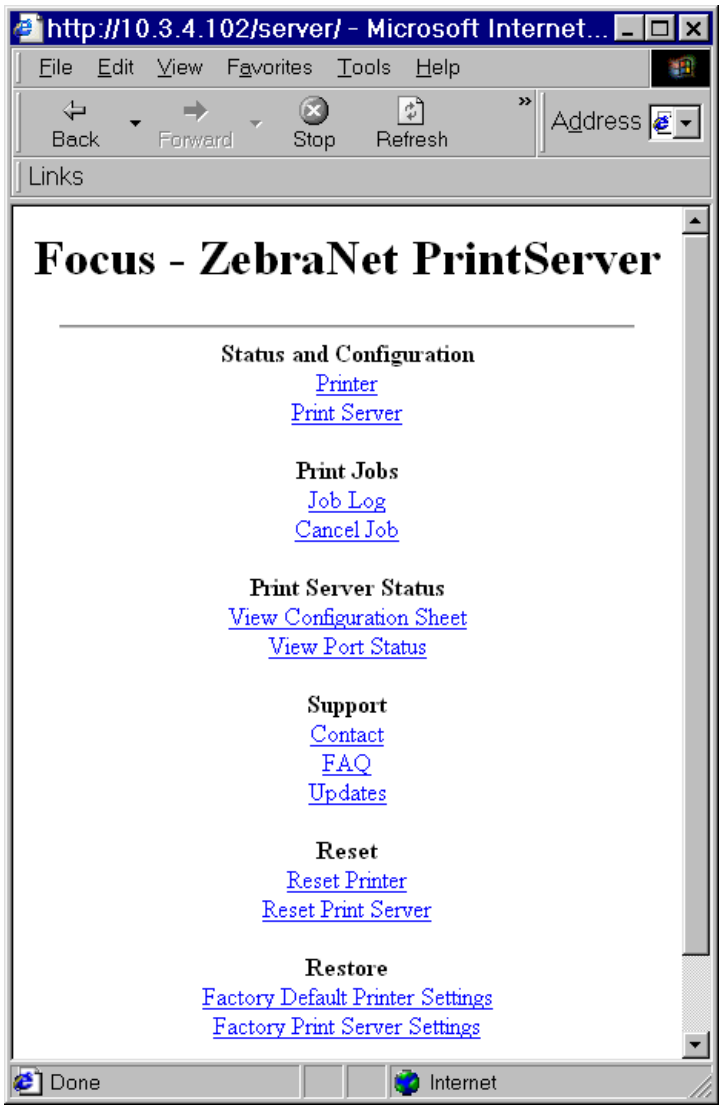
Note • Email attachments sent to the printer are not supported.

By using the proper ZPL II commands, files can be saved, loaded, printed, copied, and deleted, just as if the data were transferred from a serial or parallel port.

To access POP3, complete these steps:

1 From the Printer Home page, click Print Server Settings.

The *PrintServer* page opens:

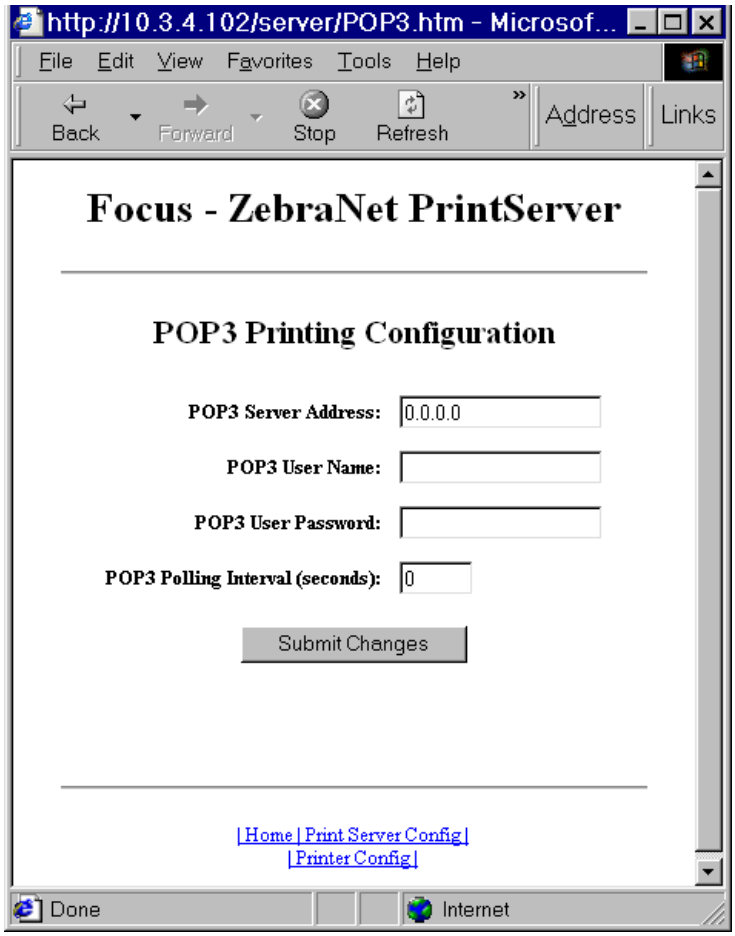


2 From the *PrintServer* page, click Print Server.

The *Print Server Configuration* page opens:

3 From the *Print Server Configuration* page, click POP3 E-mail Printing.

The *POP3 Printing Configuration* page opens:



4 Make the necessary changes, and click Submit Changes.

ZebraNet Alert monitors status and activity of all Zebra printers on the network. It alerts the administrator when there is an error condition, which reduces printer downtime and increases application efficiency.

Open Alert

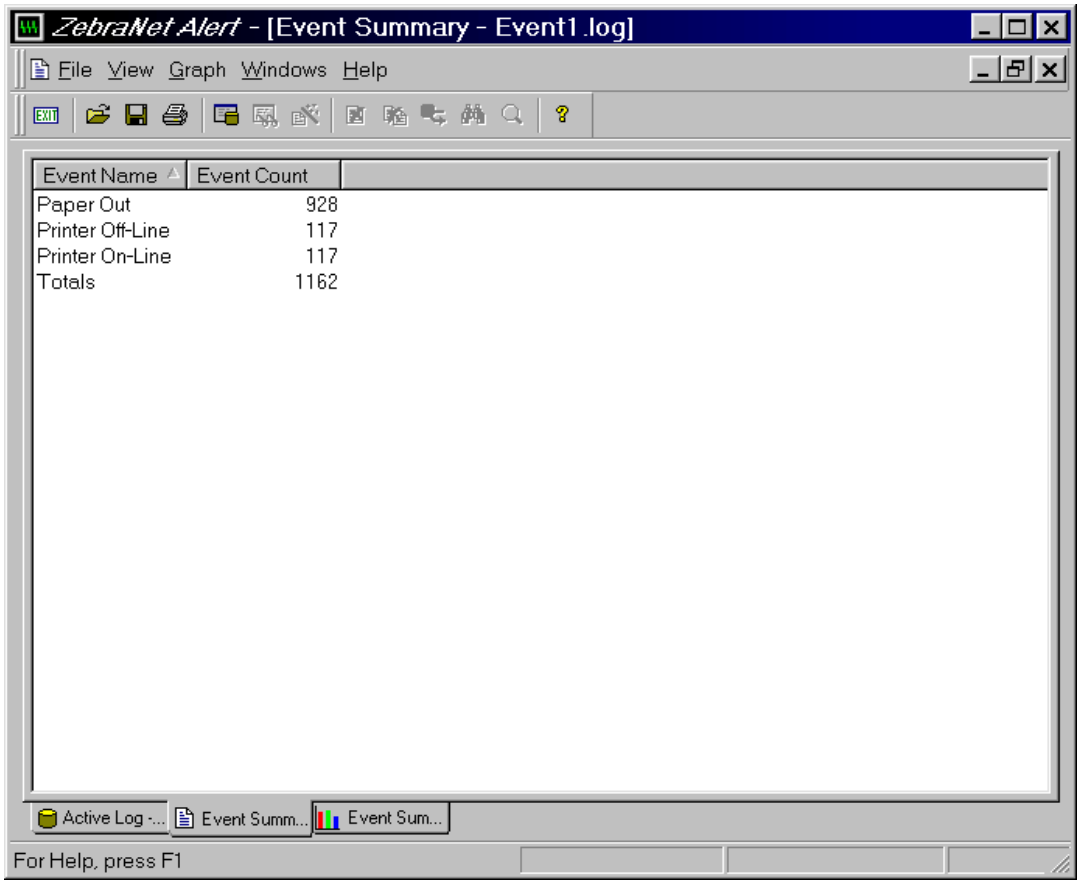
To open ZebraNet Alert, complete these steps:

1 From the task bar, select Start>ZebraNet Utilities>ZebraNet Alert.

2 In the *ZebraNet Alert* dialog, from the menu bar select Report>. The report menu option has multiple report selections.

3 Select the type of report you want to generate.

This is an example of the *Event Summary* report. Notice it generates a `.log` file:



ZebraNet Connect

For details, see *Setting up a ZebraNet Connect IP on page 36*.

ZebraNet View Java Applet

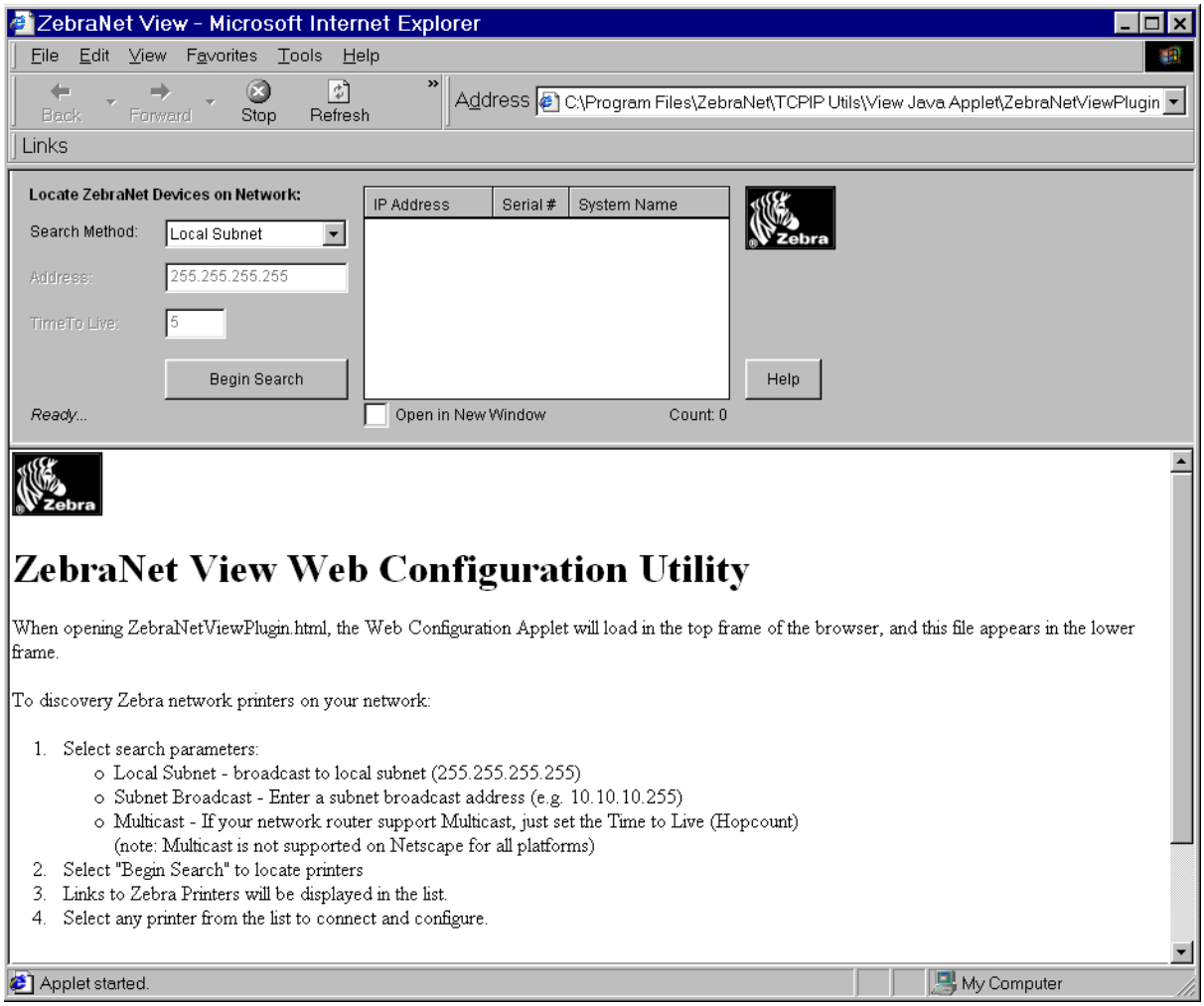
ZebraNet View Java Applet is a Java-based version of ZebraNet View. This can run on any enabled platform that can run a Java virtual machine, such as Windows, UNIX, Linux, and many others.

Important • To use this, you must have installed it with ZebraNet Utilities and then installed this application. For installation instructions for ZebraNet Utilities, see *ZebraNet View Java Applet on page 60*.

To access ZebraNet View Java Applet, complete these steps:

1 From the task bar, select Start>Programs>ZebraNet Utilities>ZebraNet View Java Applet 1.0.

This view opens:


ZebraNet View - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh
Address C:\Program Files\ZebraNet\TCPIP Utils\View Java Applet\ZebraNetViewPlugin
Links
Locate ZebraNet Devices on Network:
Search Method: Local Subnet
Address: 255.255.255.255
TimeTo Live: 5
Begin Search
Ready...
IP Address
Serial #
System Name
Open in New Window
Count: 0
Help
ZebraNet View Web Configuration Utility
When opening ZebraNetViewPlugin.html, the Web Configuration Applet will load in the top frame of the browser, and this file appears in the lower frame.
To discovery Zebra network printers on your network:
1. Select search parameters:
o Local Subnet - broadcast to local subnet (255.255.255.255)
o Subnet Broadcast - Enter a subnet broadcast address (e.g. 10.10.10.255)
o Multicast - If your network router support Multicast, just set the Time to Live (Hopcount)
(note: Multicast is not supported on Netscape for all platforms)
2. Select "Begin Search" to locate printers
3. Links to Zebra Printers will be displayed in the list.
4. Select any printer from the list to connect and configure.
Applet started.
My Computer

2 In the *Search Method* drop-down list box, select the search method you want.

3 Click Begin Search.

It searches your network for all networked Zebra printers, discovers them, and lists them.

4 When you select a device from the list that is discovered, the selected device's *Home Page* displays in the lower portion of the view (it replaces the *ZebraNet View Web Configuration Utility* content).

Hardware Troubleshooting

This section provides you with solutions to known issues.

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Troubleshooting the 10/100 PS

Resetting to Factory Defaults

To reset the 10/100 PS configuration parameters to the factory defaults, press the Test button and hold it in while turning the printer power on. Keep the test button pressed until the Status Indicator light turns green, then release the test button. After approximately 20 seconds, a configuration label prints automatically.

10/100 PS Status Indicator

A bi-color Status Indicator displays the operational status of the 10/100 PS. The following conditions might occur:

- During normal operation, the LED is solid **green** for more than 30 seconds. This indicates all the hardware is functioning properly and 10/100 PS has detected the presence of the network. It does not mean the 10/100 PS has an IP address or is attached to a printer queue.
- If the LED is rapidly flashing **green** (9 times/sec), the 10/100 PS has not detected the presence of a network cable. To solve the problem:
  - Turn the printer power off **(O)**. Remove the network cable from the 10/100 PS. Plug the network cable back in until you hear a positive click. Check the other end of the cable in the same manner. Turn the printer power on, if the 10/100 PS still does not detect a cable, continue.

Important • Cables with a rating higher than CAT-6 have **not** been tested.

  - Verify that the network cable is appropriate for the network and has an RJ-45 connector.
  - Connect the 10/100 PS to a network drop that is a known good network connection. If the 10/100 PS is still unable to detect the network cable, contact Technical Support for assistance.
- If the LED is slowly flashing **green** (1 time/sec), the 10/100 PS is trying to print a job. If the job does not print, check the following:

  - Verify that the printer has media and ribbon (if in thermal transfer mode). If the printer is showing any errors, it is unlikely that the 10/100 PS can send data to the printer. The LED continues to blink until the printer malfunction is resolved or until the printer is turned off **(O)**.
  - Flashing red indicates the Power On Self Test (POST) is in progress.
- If the LED is solid **red** for more than 30 seconds, the 10/100 PS has failed the POST. If the failure is not severe, the 10/100 PS attempts to print a configuration label on the printer. A failed POST can be caused by any of the following:
  - The printer attached to the 10/100 PS device is malfunctioning. Turn the printer power off, wait 10 seconds, then turn the printer back on **(I)**.
  - If the 10/100 PS still fails the POST, continue below. The 10/100 PS has a hardware problem that can be fixed only by replacing or returning the unit. Contact Technical Support for repair or replacement information.
- If the LED is alternately flashing **red** and **green** for longer than 2 minutes, the 10/100 PS is in firmware-download mode. This means it is waiting for new firmware data to be sent before it continues normal functioning. Perform the following:
  - If the 10/100 PS was purposely put into firmware-download mode, finish the download with the proper update utility. Contact the Zebra Web site at http://www.zebra.com to download this utility.
  - Contact Technical Support for help recovering this unit.

10/100 PS Network Status/Activity Indicator

A bi-color Status/Activity LED indicates network speed, established link, and network activity.

- If the LED is off, no link was established.
- If the LED is solid **green**, a 100Base link is established.
- If the LED is flashing **green**, a 100Base link is established and network activity has been detected.
- If the LED is solid **orange**, a 10Base link is established.
- If the LED is flashing **orange**, a 10Base link was established and network activity has been detected.

Network activity detected by this LED does not mean the activity is data for the print server. The activity is all activity on the network seen on the 10/100 PS.

ZebraNet View Utility Discovery or Configuration Problems

If you are having problems using the ZebraNet View utility to discover or configure the unit, check the following:

- Verify there is not a router between the workstation running ZebraNet View and the 10/100 PS. Because the 10/100 PS does not have an IP address, TCP/IP communication cannot be started across a router. Run ZebraNet View on the same subnet as the 10/100 PS.
- Verify the 10/100 PS has a solid green light. If the LED shows a rapidly flashing green light, check the network cable that is attached.

Unable to Print

- If you are having problems printing, verify that there is communication between the 10/100 PS and the printer. Check the following:
  - Print a configuration label by pressing the test button on the 10/100 PS. If a configuration label does not print, verify the printer has media and ribbon (if used) and is not paused.
  - If problems persist, contact Technical Support.

Unable to Configure Device

To assign an IP address to a ZebraNet 10/100 PS using ZebraNet View, you must be on the same subnet. If ZebraNet View has Multicast enabled, you might be able to view the ZebraNet 10/100 PS on another subnet, but you will not be able to configure the device.

HP JetAdmin or HP Web JetAdmin

The ZebraNet 10/100 PS might be set up and managed using HP JetAdmin or HP Web JetAdmin products.

Frequently Asked Questions

This is a group of frequently asked questions (FAQs) about 10⁄100 PS.

FAQs

This table provides frequently asked questions (FAQs) on 10⁄100 PS:

Question	Answer
Are there any differences in functionality between a ZebraNet 10⁄100 PS with an EPL-based printer and with a ZebraLink-enabled ZPL printer?	**Yes.** • In a ZebraLink environment, with either a Web browser or with the ZebraNet View Utilities, there are a variety of Web pages that display a wealth of status information regarding both the ZebraLink printer and its ZebraNet 10⁄100 PS. However, when used with an EPL printer, such as the LP/TLP 2844, the Web pages for printer status are not available at this time, only the Web pages showing status of the 10⁄100 PS are displayed. The 10⁄100 PS can be easily configured. However, printer configuration information regarding the EPL printer is not available via the ZebraNet Utilities. • Error conditions: Using ZebraNet Alert, an EPL printer can be configured to use different IP addresses to report the following Alert status conditions: on-line, off-line, paper out. • For EPL: only two destinations can be configured to report error messages (online, offline, and paper out) using SMTP email alert – serial and parallel port destinations are not supported.

Question	Answer
Can the internal ZebraNet 10⁄100 PS option work on a computer network that is running both TCP/IP and IPX protocols simultaneously?	**Yes.** The ZebraNet 10⁄100 PS runs all of its available protocols simultaneously. This means that the ZebraNet 10⁄100 PS can run on mixed networks such as a network using Microsoft, UNIX, and Novell NetWare operating systems. **Important** • Does not support IPX, but can function on networks that use IPX protocols.
Will the ZebraNet 10⁄100 PS allow connectivity to anything other than a PC network?	**Yes.** The ZebraNet 10⁄100 PS allows connectivity to systems such as IBM's AS400, provided that it is configured using TCP/IP. Other network protocols can be used with third-party adapters that are converted to 10BASE-T.

Question	Answer
What if a print job makes it to the queue, but never leaves the queue? The label does not print.	These are the things to check: • Confirm that the printer is turned on and receiving power. • Confirm that the network cable is plugged in and that you can ping the printer. If the above bullets do not change the outcome, it is likely that there was a misconfiguration while creating the queue. The queue must be recreated verifying the following: • Confirm that you use the print server's valid IP address. • If you are using a UNIX or AS/400 host, there is an option for the remote queue name. There is only one valid response to use: PORTLF1. • If Windows does not have LPR installed, the above required option should be left blank. • See the documentation for other operating system specific queue creation.
What are the minimum requirements to network a printer?	• Cat-5 network cable with 10BaseT connectors • 10⁄100 PS • Hub or Switch • If a hub or switch is NOT used, you need a cross-over cable. • Workstation running a TCP stack with print services installed
What is the default User ID and password for the print server?	• The User ID is **admin** and the password is **1234**.

Question	Answer
What ports are open on 10/100 PS and related software?	**TCP Ports**: • 21 FTP • 23 Telnet • 80 HTTP Server • 515 Printer port • 631 IPP port • 9100 Raw socket connection **UDP Ports:** • 161 SNMP broadcast from 10/100 PS • 162 SNMP trap on ZebraNet Alert • 4201 discovery destination on 10/100 PS • (dynamic) SNMP get request from ZebraNet View • (dynamic) discovery broadcast from ZebraNet view • (dynamic) discovery broadcast from ZebraNet view Java

Question	Answer
What are my network connectivity options based on when using a 10/100 PS?	It depends on your environment, but the print server accepts print jobs in any of the following ways: • *FTP* — ZPL/EPL files can be sent to the printer via a FTP client as standard ASCII files • *HTTP* — (ZebraLink-enabled printers *only)* Using the script option of the print server's homepage, you can type ZPL into a specified location of the Web browser and send it to the printer • *IPP* — Using third-party IPP clients, print jobs can be sent via the internet • *LPR/LPD* — Sometimes referred to as queue based printing. LPR/LPD is the standard in network printing. Most TCP/IP operating systems are compatible with this option • *Raw socket connection* — You can connect to the printer directly via the network, bypassing *everything in-between*. This option is commonly used to integrate ZPL/EPL into existing programs, such as VB scripts • *POP3* — With proper configuration, you can place ZPL/EPL files into the body of an email, and it will print. The print server periodically checks this email box at the specified intervals and prints the body of the message. IMPORTANT: attachments and subject line are not supported

Glossary

10BaseT A type of Ethernet that uses unshielded twisted pair cable.

100BaseT A type of Ethernet that can transmit 100Mb of data per second with a twisted-pair cable.

arp The standard TCP/IP method for determining the actual network address of a device based on its IP address.

ASCII A standard for the binary representation of characters.

BOOTP BOOTP (Bootstrap Protocol) is a protocol that lets a network client configure automatically. It can automatically configure any of the following information: IP address, gateway, subnet, system name, name server, and more. It automatically assigns the necessary settings from a pool of pre-determined addresses for a certain duration of time. BOOTP is the basis for a more advanced network manager protocol, the DHCP (Dynamic Host Configuration Protocol).

broadcast In a network, a situation when all destinations on the network receive a given packet.

client A workstation or PC in a client/server environment.

community For SNMP, a relationship between an agent and a set of SNMP managers that defines security characteristics. The community concept is a local one, defined at the agent. Each community is given a unique community name.

current mode (parallel port) A mode that the printer and print server negotiate.

DHCP (Dynamic Host Configuration Protocol) DHCP is an alternative to another network IP management protocol, Bootstrap Protocol (BOOTP). Like BOOTP, DHCP can configure an IP address, gateway, subnet, system name, and name server. When speaking about the 10/100 PS, BOOTP, and DHCP configure the same options.

delete bytes This number is used to remove characters from the beginning of every job sent to the logical printer. The value for delete bytes can range from 0 to 255.

dynamic A dynamic configuration, as the name implies, means that it changes. BOOTP and DHCP offer time-based leases for the configurations they assign. Their changes depend on the time-based lease, and how often the printer itself is offline and online again. A dynamic configuration includes BOOTP or DHCP.

EPL Eltron Programming Language.

Ethernet A widely used local area network system based on the IEEE 802.3 standard.

firmware Software routines that are stored in ROM (Read Only Memory). This is typically part of a device, such as a printer or 10/100 PS.

FTP File Transfer Protocol, a TCP/IP-related protocol for transferring files between devices on a network.

Flash memory A type of memory that allows read-and-write operations, but permanently stores data when the power is turned off. Useful for storing firmware because it can be easily updated by downloading new code.

gateway A device that converts one higher-level network protocol to a different higher level protocol.

gleaning A temporary, local configuration option. Gleaning lets you add the address of the device you want to configure to your local workstation’s arp table. This configuration is not permanent and is valid only from the workstation from which you entered the arp information. After the information is entered into the workstation’s arp

table, the user follows up with a Telnet session to enter the information permanently. This configuration option is used mostly by non-Windows workstations that cannot run the ZebraNet View configuration utility.

IP Internet Protocol, one of the main protocols of the TCP/IP protocol suite.

IP address A network address used by the TCP/IP protocol.

IPP Internet Printing Protocol. Allows you to associate a printer with a URL address that is used for printing over the Internet.

IPX Internetwork Packet Exchange, one of the NetWare protocols.

JetAdmin A Hewlett-Packard printer management program available for NetWare and TCP/IP.

logical Refers to conceptual rather than physical. For example, a computer might have a single physical connection to the network (an Ethernet adapter card), but could have logical connections to several other devices on the network.

MAC Address Media Access Control. Ethernet address that corresponds to the assigned IP address.

name server A workstation on a TCP/IP network that provides a list of all workstations on the network.

NetWare A network operating system developed by Novell.

node A device connected to a network, such as a computer or print server.

parallel port A port on a device that sends information in groups of bits over multiple wires, one wire for each bit in a group.

ping A TCP/IP command that determines whether a device is accessible on the network.

POP3 Post Office Protocol, the protocol used to retrieve email from the server.

port A physical connector, such as the parallel port, or a logical connection to a device.

post string A string that is sent at the end of every job going to the logical printer. Maximum 64 characters long.

pre string A string that is sent at the beginning of each job that goes to the logical printer. Max 64 characters long.

print server A device in a network that changes a network protocol into a printer protocol.

protocol A method of sending and receiving data between two or more workstations on a network, and insuring that the data is received without errors.

rarp Reverse Arp, a standard TCP/IP method of determining a device's IP address based on its Ethernet address.

raw TCP port A type of TCP port in which data is passed unmodified to the receiving node.

RJ45 A type of modular jack connector similar to a telephone connector with up to eight wires. Used for 10BaseT Ethernet connections and for serial port connections.

serial port On a printer or print server, a port that transfers data one bit at a time. Serial ports usually have either a 25-pin, 9-pin "D", or RJ-45 connector.

setting mode (parallel port) A mode that the print server is set to for the highest level of parallel port communications.

server A device on a local area network that provides services to client computers on the network.

SMTP Simple Mail Transfer Protocol, a protocol used to send email messages over the Internet.

SNMP Simple Network Management Protocol, a protocol for monitoring and controlling devices on a network.

spooling In printing applications, spooling is the transfer of data to a temporary storage area on disk (the print queue) prior to printing. Spooling allows many jobs to be queued to a single printer.

static Refers to a static IP address. All information is provided by the network administrator.

subnet mask A TCP/IP method of dividing a network into several smaller subnetworks.

TCP/IP Transmission Control Protocol/Internet Protocol, the de facto standard for Internet communications that is widely used on local area networks.

TCP Port A method of accessing a TCP/IP service, where a device with a single IP address can have multiple TCP ports.

Telnet A TCP/IP protocol that allows two devices to communicate over a LAN.

trap An unsolicited message sent by an SNMP agent to an SNMP management station. It notifies the management station of some unusual event.

UNIX A general-purpose computer operating system used on many different kinds of computers.

WCSO Wireless Card Socket Option. Zebra's wireless Ethernet option.

Windows 95 and Windows 98 Microsoft's PC operating systems that feature built-in peer-to-peer networking.

Windows NT Microsoft's multitasking operating system that can be used either as a client or as a server.

Windows 2000 Microsoft's multitasking operating system that replaces Windows NT; can be used as either as a client or as a server.

ZebraNet PrintServer II An Ethernet connectivity solution.

ZebraNet 10/100 Print Server An Ethernet connectivity solution.

ZebraLink Allows you to connect and control your bar code printers anywhere and anytime.

ZPL II Zebra Programming Language II is a powerful label-definition and printer-control language.

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